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THE

Alienist and Neurologist

A QUARTERLY JOURNAL

—OF—

SCIENTIFIC, CLINICAL AND FORENSIC

Psychiatry and Neurology.

*Intended especially to subserve the wants of the
General Practitioner of Medicine.*

“Quantam ego quidem video motus morborum fere omnes a motibus in systemate nervorum
ident, ut morbi fere omnes quodammodo Nervosi dici queant.”—Cullen's *Nosology: Book*
II., p. 181—Edinburgh Ed., 1780.

VOLUME IX.

—EDITED BY—

C. H. HUGHES, M. D.,

And an associate corps of collaborators.

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ORIGINAL CONTRIBUTIONS.

On the Minute Structures of the Corpora
Striata and the Thalami Optici.

PRIZE ESSAY. ROYAL INSTITUTE OF LOMBARDY.

By VITTORIO MARCHI, M. D.

THE recent studies of Prof. Golgi on the nervous centres, effected by means of the black reaction, which was discovered by him, have brought to light a series of new facts of the greatest importance in relation both to anatomy and physiology. In his researches he studied the nervous elements morphologically, endeavoring to discover whether to the different functions ascribed to the various cerebral zones there corresponded differences in structure, and with this object in view he directed his attention specially to the central and the occipital convolutions, as representing the so-called motor and sensitive zones.

It is beyond doubt that the results obtained by Golgi were very satisfactory, and all have recognized the necessity of continuing these studies, and of establishing with exactitude the histological structure of other provinces also of the nervous system, so as to enable us to deduce from them physiological conclusions. I have therefore been desirous of profiting by the valuable method described by him, and I have chosen as the subject of

my researches certain parts of the brain, the anatomy and the physiology of which, especially the latter, are still very obscure, at least to those who, caring little for ingenious hypotheses, desire to base their opinions on solid and indubitable facts. It is my intention to treat of the corpora striata and the thalami optici.

The knowledge hitherto possessed on this subject has been furnished principally by Luys, Meynert, Huguenin and Henle, but their studies are very defective and inexact; indeed the very statements of these writers, which to-day pass for incontestible facts, are, as I have before pointed out, and as I shall presently demonstrate, in great part, the fruit of hypothetic conceits.

The object of my researches, while pursuing the course indicated by Prof. Golgi, has been that of studying in the corpora striata and the thalami optici so much as respects the morphology, the disposition and the distribution of the nervous elements, and likewise of ascertaining precisely the manner in which the fibres in them behave, in relation to the cells, comparing the results obtained with the knowledge before possessed, and with the opinions which are most generally accepted in relation to the functions pertaining to these so-called ganglia.

In July, 1883, in a communication read by me before the Academy of Turin, I stated summarily the result of my observances on the corpora striata; at a later time, in a second prefatory note, I published certain results on the minute structure of the optic thalami. At present, after more minute and numerous researches, I am enabled to give fuller details on both subjects. Before, however, proceeding directly to speak of the results obtained, it seems to me proper to make some observations on the macroscopic anatomy of the parts treated of.

I.—CORPORA STRIATA.

On opening the lateral ventricles of the brain, we see on their floor, anteriorly, the upper and inner portion of the corpora striata, which has been called by anatom-

ists the caudate or intraventricular nucleus. It is of a grayish red color, like that of the cortical substance; it has the form of a pear, or, as Charcot better describes it, of a comma with a thick extremity directed forward, and another backward, with which it forms an inner convexity, which embraces the optic thalamus on its outer side.

The other portion of it is placed deep in the cerebral substance, and it has the form of a segment of an ovoid; this part is called the lenticular or extraventricular nucleus. The two portions are separated by a streak of medullary substance, which constitutes the internal capsule (Plate I, Figures I. A. A.);* because of this separation, which, as I shall presently show, is merely apparent, anatomists have divided the corpora striata into the two above-named nuclei.

When considered in their totality, the corpora striata are in relation, outwardly with the external capsule and the insula, inwardly they contribute to the formation, in great part, of the inferior walls of the lateral ventricles, and they are in close relation with the foot and the inferior face of the cerebral peduncles. At the thick extremity or head, they approach each other, and are united by means of the white anterior commissure of the cerebrum.

The caudate nucleus, which, as we have said, projects in the lateral ventricle, presents an upper convex face, covered by the ependyma; an under and external face, which rests on the internal capsule; and two extremities. The posterior extremity, or tail, proceeds to terminate outside the pulvinar of the optic thalamus; the anterior

* We regret our inability to reproduce the six beautifully and most minutely executed plates which accompany this interesting paper. Readers accustomed to the horrid daubs and henscratchings perpetrated by some of our publishers of works on cerebral anatomy, would, in Dr. Marchi's plates have a rich treat, which would certainly intensify their disgust with the villanous caricatures that so often distress their visual powers, and lure them into a will-o-the-wisp chase, whilst vainly endeavoring to identify the parts pretended to be shown with the actual forms and relations, which in their anatomical class dissections, they had once observed. Truly the light shed by such lurid beacons is as bewildering to the mental, as it is wearying to the physical optics of the student.

extremity, or head, going forwards, downwards and inwards, is in relation with the knee of the corpus callosum, and intimately with that portion of the cortex which corresponds to the anterior perforated space. Finally this anterior extremity is united to that of the lenticular nucleus in front, and beneath the internal capsule.

The lenticular nucleus has a form and relation more complex than the caudate nucleus. When it is studied on a vertical section, made in correspondence with half of the optic thalamus, it presents the aspect of an irregular cone, the base of which looks outwards and upwards, and the point downwards and inwards. The base corresponds to the convolutions of the island, from which it is separated by the external capsule, the outer wall, and the layer of medullary substance adhering to these convolutions. The upper and internal face, which is the most extensive, corresponds to the external face of the internal capsule; the inferior face, on the other hand, is in relation with the cerebral peduncles, and more specially it is contiguous to the inferior face of the hemispheres. The anterior extremity is voluminous, and is hidden in the frontal lobe; the posterior extremity thins off and terminates outwards in correspondence with the external geniculate bodies.

We have said that the head of the caudate nucleus bends downwards and becomes confounded with the gray substance of the perforated space, it may indeed be said to be continuous with it.

In the above-named section there is observed a particularity that has been mentioned by all writers, which is that the lenticular nucleus projects in three segments, distinct in color and in their different size; this appearance is due merely to the greater or less number of the nervous fibres here distributed.

We have before said that the corpora striata are separated by means of the internal capsule into two nuclei, and that this separation is only apparent; this is demonstrated by the fact, that between the fascicles of fibres which traverse the corpora striata and constitute the

internal capsule, there are found striæ of gray substance common to both the nuclei; therefore, considering this disposition, it may be established that these nuclei are not two distinct organs, as they have usually been regarded, but that they form only one organ.

HISTOLOGICAL STRUCTURE OF THE CORPORA STRIATA.

I shall first relate the present state of the knowledge possessed on the subject.

As a general fact all writers are in accord in holding that there enter into the constituency of the corpora striata cells, nervous fibres and an interstitial substance (neuroglia). Proceeding into details, Luys, in his "Treatise on the Cerebro-Spinal System," when treating of the gray substance of the corpus striatum, distinguishes in it two sorts of nervous cells, large and small; but those which he more particularly describes as the true gangliar elements are the large ones. From the description which he gives of them, they would in general be of ovoid form, and furnished with a large nucleus and numerous prolongations: around the body of the cell and throughout the length of their prolongations, he describes some very small cells, which, as he says, are the final terminations of the anterior fibres of the spinal medulla. He regards the small cells not as making part of the gray substance of the corpus striatum, but as the terminal elements of the cerebral peduncles.

We find three sorts of cells described by Huguenin; large multipolar cells (30 micro m. m.), often pigmented; others smaller (15 m. m. m.), which are also multipolar and pigmented, and finally very small elements (5—10 m. m. m.), of nervous nature, not to be confounded with the nuclei of the neuroglia.

Meynert admits the same three cellular forms, and he adds that the axis of the cells proceeds in the same direction as the fascicles of fibres.

Though with regard to the form and size of the cells we had some data corresponding to the truth, yet as to

the nervous prolongations of the cells of the corpora striata previous to the studies of Prof. Golgi, we had no exact notion; even in Huguenin we find it asserted that a nervous prolongation of the cells of the corpora striata, is entirely unknown.

In my researches I have followed two methods, one in the fresh state, by means of the common methods of observation, and the other by the black reaction. By the former I have recognized in the cells of the corpora striata sometimes a globose aspect, fusiform and frequently triangular; their size varies between 20 to 50 m. m. m.; the cellular substance appears finely granulous, often pigmented, especially when we have adult brains under examination; the nuclei, of the size of 5 to 8 m. m. m. have also a granulous aspect, and they contain a nucleolus. The cells are furnished with numerous protoplasmic prolongations and with a unique nervous prolongation; this distinction appears accentuated by the process, but it is only by the black coloring that we are enabled to follow them to some length, and to bring to light something more on their ulterior mode of behavior.

Coming now to speak of the results obtained by means of the black reaction, I state at the outset that these researches have been made on the brain of man, the monkey, the dog, cat, rabbit, guinea pig, rat, bat, pig and calf.

Under this method we have observed that the nervous cells of the corpus striatum have almost always a polygonal form, sometimes, however, triangular, and fusiform, according to the position which they occupy and the direction of the sections. As regards the diameter, two sorts of cells may be distinguished; large cells which measure from 20 to 50 m. m. m., and cells of 15 to 20 m. m. m.;—in the lenticular nucleus we find a prevalence of cells of greater diameter; in the caudate nucleus we find cells of less diameter.

Their axis is not, as Meynert says, always in the same direction as the fascicles of fibres, but has irregular position in the whole mass of the gray substance.

Numerous prolongations are detached from the cellular body, one alone of which is distinguished from the others by special characters; this is the nervous prolongation; all the others have the character of the so-called protoplasmic prolongations. The nervous prolongation has not always its origin from the cellular body, but sometimes from the thick root of a protoplasmic prolongation. Whatever may be its point of origin, it proceeds a very short extent gradually slendering, so that on setting out it has a conical aspect; afterwards, for a longer distance, it maintains its regular form, glistening and simple; then it assumes an irregular course, tortuous, and there emanate from it, at distances pretty regular, and at angles almost always right, filaments, which, in their turn, give off other very fine branches which are lost in the nervous substance.

According to the behavior of the nervous prolongation we may also, distinguish, following the division of Golgi, in the corpora striata, two types of cells; those in which the nervous prolongation subdivides complexly, and loses its individuality in forming a complicate nervous interweaving (cells of the second type of Golgi); those, on the contrary, of which the nervous prolongation maintains its proper individuality, yet giving off lateral branches, which subdividing complexly are lost in the nervous substance (cells of the first type of Golgi). The fibres which terminate in the corpora striata behave similarly to the nervous prolongation, therefore with respect to these also, we may distinguish two classes, those which, dividing complexly, are lost in a very fine nervous net-work, and those which, having given off a few branches, maintain their proper individuality, finally going onward to constitute the nervous prolongation of the cells of the second type.

The protoplasmic prolongations have origin, in number from four to eight, from the cellular body; they ramify irregularly, at almost acute angles, and become constantly more slender. Their final termination is not easy of establishment; but I absolutely deny that they make part of the nervous net-work, and considering that their ultimate

offshoots are in proximity with the vessels, and among the prolongations of the cells of the neuroglia, it is not improbable that they are brought into relation with both.

In my researches, I have considered whether in the lenticular and the caudate nuclei constituting the corpus striatum, there exists, as regards the two cellular types, any difference; and I have discovered that in both the nuclei there is a predominance of cells of the first type, but this fact is more accentuated in the caudate than in the lenticular. The direction taken by the nervous prolongations is very irregular; for example, in the caudate nucleus they are sometimes carried for a long distance towards the ventricular surface, and bending they gain the the internal capsule; at other times they are carried towards the tail of the nucleus, but always giving origin, along their course, to some secondary branches, which, as we have said, are lost in the nervous substance. In the lenticular nucleus also they have an irregular course, but some are seen carried towards the external capsule and others towards the internal one, and taking afterwards a descending direction towards the peduncle.

Those proceeding from the cells found in the midst of the medullary fascicles of the internal capsule, are in general carried towards the cerebral peduncles, but some are directed towards the corona radiata.

II.—THALAMI OPTICI.

On raising the trigone, the tela choroidea, and the choroid flexus, we find, posteriorly and on the interior of the corpora striata, two masses of gray substance, pale and of ovoid form; these are the optic thalami; they are more consistent than the corpora striata, and their color is clearer; the last fact is due to a thin stratum of fibres (proceeding in great part from the bandelette of fibres of the optic nerves, and from the cerebral peduncles), this stratum covers their surface. They are directed obliquely from before backwards, and from within outwards, and are situate on the upper plane of the cerebral peduncles.

In the optic thalami we may consider three faces and two extremities. The superior face, convex, and rough, covered by the choroid plexus, concurs in forming the inferior wall of the lateral ventricle. The inferior and external face adheres in great part to the superior face of the cerebral peduncles, from which it receives a great part of the fibres, whilst it is at the same time separated from the lenticular nucleus. In the most posterior portion of this free face the corpora geniculata are found. The internal face, of gray aspect, covered by the ependyma, forms by its two anterior thirds the wall of the third ventricle, and in its posterior third it is in continuation with the bigeminal eminences. This part is divided from the superior face by means of the pineal gland. The anterior extremity of the thalamus is in relation with the internal border of the lenticular nucleus and with the anterior pillar of the corresponding side

The posterior extremity is rounded, and is larger than the anterior; it is surrounded by the inferior wall of the sphenoidal prolongation and the the cornu Ammonis. The corpora striata and the thalami optici are, in the ventricular portion, bounded by a sulcus which is occupied by the lamina cornea, the vein of Galen beneath it, and deeper by the tenia semicircularis.

The lamina cornea is but a thickening of the ependyma; the semicircular bandelette, or tenia, is a small fascicle of nervous fibres, which passes as a riband along the sulcus, and dips down between the two great ganglia.

I should lastly observe that between the two internal faces of the thalami optici, there is found a lamina which is called by anatomists, the gray commissure, or median soft, about as wide as a centimeter, sometimes thick, and at other times thin, which as a bridge unites the two ganglia. This commissure has by many observers, including Teuchini, been found wanting in about one-third of the subjects, and from this fact solely, it has been judged by many that it is of no physiological importance. As relates to this I can assert that in the hundreds of autopsies

which I have had occasion to make, I have always observed that in the majority of cases this commissure existed normally in the locality in which it has been described; sometimes, however, it was displaced downwards, and was incorporated with the floor of the third ventricle; and finally, in those cases in which it seemed to be totally absent, on attentively observing with a magnifying lens the inner part of the thalami, there was found in correspondence with this commissure, a rough line, devoid of ependymal epithelium, a clear sign of its persistence, and that by a process of retrogression it had been in these cases atrophied and thinned away, so that on the slightest manipulation it evaded detection by the eye of the anatomist.

Henle also thinks that the statistics of individuals wanting the gray commissure, have been exaggerated, exactly because of the numerous variations to which this part is subject. That it may be of little or no importance I also believe, for reasons which I shall hereafter mention, when treating of its histological structure.

HISTOLOGICAL STRUCTURE OF THE THALAMI OPTICI.

The histological notions of the minute structure of these ganglia that have hitherto prevailed, are even more defective than those relating to the corpora striata. Many observers have occupied themselves with the systems of fibres (systems of projection) which, according to some, reach the thalami optici both from the periphery and the centres, but no one has yet furnished to us an exact study relating to the intimate structure of these organs, and the relations that exist between the elements composing their nervous substance. It is strange to see still reproduced in some treatises on anatomy, the assertions of Luys and Meynert on the optic thalami, as absolute facts, when under even a cursory examination their inaccuracy clearly appears. Nothing more inexact than the description given by Luys, of the optic thalami is to be met with; he holds that these ganglia are constituted: first of a series of small masses of

gray substance distinctly isolated from each other, which according to him represent the central apparatuses of reception; second of a central region of gray substance, disposed in the form of two antero-posterior processes, along the internal walls of the third ventricle; these processes he regards as the central regions of the spinal axis expanded into the cerebrum, and closely allied to the different encephalic organs. According to him these masses or centres are microscopically constituted of an amorphous gray substance and of cells of ovoid form and yellowish color, having one or two nervous prolongations, which are brought into relation with afferent and efferent nervous fibres. The afferent fibres, he says, are in direct connection with a unique prolongation; and the efferent are in indirect connection by means of the nervous net-work given by the subdividing of the other prolongations.

Huguenin, on the other hand, holds that in the gray substance of the thalami there exists but one form of cells, varying from 20 to 30 m. m. in length, and from 8 to 10 in breadth; their form differing from that of the cells of the corpora striata, inasmuch as they are fusiform. He adds that the number and disposition of their prolongations are unknown; he states that "the differences in the form of the cells and their particular disposition, are all that is known of the histology of the optic thalami.

Meynert maintains that the whole of the optic thalamus consists of this same gray substance; and that the appearance of its division into centres or isolated masses, as Luys believed, depends merely on the interweaving of the fascicles of fibres which enter and depart from this ganglion; the hypothesis of Luys as to the physiological differentiation of his centres, therefore naturally breaks down. Meynert adds that the nervous cells both of the thalami and the corpora striata have a regular form and are disposed with their great axis parallel to the fibres.

This brief sketch of the opinions hitherto known to obtain was necessary for the better understanding of the results obtained by me. I proceeded here, as I did with

the corpora striata, in a double method; treating the fresh parts by the ordinary means and by the black reaction.

By the former I found, in all the animals, great and small cells; but here, compared with what was observed in the corpora striata, the elements of the neuroglia and nervous fibres were found in greater quantity. In the series of the the mammifera examined by me, not excluding man, I always observed that the cells had an irregular form, varying from the polygonal to the triangular and the fusiform; they were not disposed in isolate and distinct groups, as Luys says, but scattered irregularly in all the nervous substance. They were furnished with numerous prolongations, which, by the common methods of coloring, it was difficult to follow.

The size varied in general from 50 to 60 m. m. m.; it varied also according to the different species of the mammifera,—for example, in the calf and the pig the cells had a greater diameter than in the cat, the dog, the monkey, etc.

By the black reaction, on the contrary, we could establish many facts that are yet controverted. From sections of the thalami of small mammifera, placed wholly under this reaction, we were enabled, at every point, to observe nervous cells interposed among the cells of the neuroglia and the nervous fibres. The nervous cells are large and small, their form varies; some are globose, triangular, or fusate, etc. Their great axis, is, as in the corpora striata, irregularly directed in all ways. They are furnished with several prolongations, among which the unique nervous prolongation is discovered at a glance of the eye. The large cells have a greater diameter than those of the corpora striata, and it varies in the different mammifera, but in general it does not exceed 60 m. m. m. The protoplasmic prolongations are four to six in number, thicker, longer, more rigid and less ramified than those of the cells of the corpora striata; in a word, from the cellular form and the behavior of these prolongations, we are

enabled to discover a certain analogy to the cells of the anterior cornua of the medulla spinalis.

The nervous prolongation behaves in general according to the two types of cells of the corpora striata, before described; but in the thalamus there is a predominance of those nervous prolongations which, though giving off some secondary branches, yet maintain their individuality in order to constitute the cylinder axis of a nervous fibre (cells of the first type).

The uniformity of the structure of the thalami, observed in the mammifera, is seen in man also. As to the direction of the nervous prolongations, no certain law can be established, for they are often carried towards the convex surface of the thalamus, which looks into the ventricular cavity, and then are driven inwards at a right angle, skimming along for a distance under this surface; at other times they take a direct course to the cerebral peduncles; some are seen to be directed towards the corona radiata, but we cannot establish whether they continue in this direction, or are destined to take another turn. In the thalami there also are two classes of fibres corresponding to those of the corpora striata; in these the first class predominate, that is to say, those fibres which, having given off a few lateral branches, are united to the nervous prolongation of the cells. As to their direction we shall speak when treating of the internal capsule.

I shall finally add a few words on the structure of the gray commissure, which, as has been stated, unites the two optic thalami on their internal faces. It is admitted by most anatomists that this commissure is constituted of nervous cells, interposed among the fibres which pass from one thalamus to the other. Now, if we examine it by the common methods of research, it is true that there is presented to us, under the microscope, a very great number of cells, which have the aspect of small nervous cells; but by controlling these researches by the black reaction, we become surprised on seeing that these cells have the characters common to the other

nervous cells described in the corpora striata and the thalami, since they absolutely want the nervous prolongation, and present, instead, those slender and filiform characteristics of the cells of the neuroglia. As such therefore we must necessarily regard them, although there may be some of them differing somewhat from forms before known.

From what I have stated respecting the structure of the optic thalami, it seems to me that we are able to assert: first, that they are not constituted of small centres or nuclei of isolated cells, distinct from each other, as has been held by Luys, but that the nervous cells are irregularly scattered through the whole ganglion; second, that these cells have not an exclusively fusate form, nor are they furnished with only one or two prolongations, but have various forms and numerous protoplasmic prolongations, together with a unique nervous prolongation; third, that nervous cells are totally wanting in the gray commissure.

III.—INTERNAL CAPSULE.

Mode of Origin of the Fibres in the Corpora Striata and the Thalami Optici.

From the great interest presented by the internal capsule, I deem it useful to give here a short description of it, and afterwards to speak of the mode in which the fibres that proceed from the ganglia described by me, take part in its formation.

Two vertical sections, one made down by the head of the corpora striata, the other corresponding to the half of the thalami, show that the internal capsule is directed from above downwards, and from within outwards.

In traversing the ganglion it is disposed as a fan, to give origin above to the corona radiata, and below by a more limited portion, to the foot of the cerebral peduncle. Anteriorly it divides the corpora striata into the two nuclei before described, but it does not reach their anterior

extremity, by which the two nuclei are fused at this point; posteriorly it divides the thalamus opticus from the lenticular nucleus.

So much as to the macroscopic part; histologically, the fibres composing it proceed from different origins.

This fact, although previously admitted, but not sufficiently demonstrated objectively, has been the object on my part of long and patient researches, by which I have been enabled to recognize in the internal capsule: first, fibres that, without giving off lateral branches, go directly from the peduncle to the corona radiata; second, fibres which, in this traject, give off lateral branches, which go to enter into the different nuclei (lenticular, caudate and optic thalamus); third, fibres which, having originated in the cells situated in the body of the internal capsule, proceed upwards and downwards; fourth, fibres which go from the peduncle to the corpus striatum; fifth, fibres which go from the corpus striatum to the corona radiata; sixth, some fibres which, issuing from the optic thalamus, go downwards towards the peduncle; seventh, finally, some fibres which go from the thalamus towards the corona radiata.

As to the manner in which the fibres stand related to the cells of the corpora striata and the thalami, the opinions of observers have been very conflicting.

Henle holds that in the corpora striata the fibres have a true termination; and that the thalamus, on the contrary, is merely traversed by them, although he had seen some fibres unite with the nervous prolongations of the cells.

Luys says the distribution of the fibres and their relations with the cells are totally unknown, and it is only by an effort of induction that he is led to admit the probability of their ultimate connection with one of the numerous prolongations of the large cells. He therefore admits into the system of projection three orders of fibres, of which the great cells are the receptive organs; that is, fibres proceeding from the cerebral cortex, the medulla spinalis, and the cerebellum. The manner of termination of these

fibres, according to him, would be, for the cortico-striate fibres, by means of the prolongations of the great cells, whilst the anterior fibres of the spinal medulla and the cerebellum would be in continuation with other prolongations of the same cells.

Meynert holds, in a more precise way, that from one and the same cell two prolongations have origin, one of which becomes a fibre of the spinal medulla, and the other a fibre of the cerebellum.

All these purely hypothetical observations have come to the ground, since the studies of Prof. Golgi on the mode of origin of the nervous fibres, in which it is found, as a general law, that many protoplasmic prolongations originate from one cell, and a unique nervous prolongation, and that according to the behavior of this one, the cells may communicate with the fibres directly or indirectly. In confirmation of what Prof. Golgi has in general stated, I shall say that in the corpora striata also, the origin of the nervous fibres, observed by me, maintains the same law, that is, they may originate directly from cells of the first type, or indirectly from those of the second type.

I must not close these brief remarks without relating two interesting observations made by me during my researches. One of these relates to the fibres of the optic bandelette, which, as we have already seen, covers the upper face of the thalamus. These fibres (and this appears most evident in the small mammifera) penetrate in great part into the ganglion, arching inwards, without however our being able to say whether they take on direct union with the cells, or are only in their passage. The other observation is not less important. In the brain of a bat, placed entire under the black reaction, I was able to see clearly that there depart from the pyramidal cells of the cortex, nervous prolongations, which, after giving off some fine secondary branches, penetrate directly into the internal capsule. I further observed that the cells nearest to the inter-hemispheric fissure, gave origin to a nervous prolongation, which divided into two branches,

one of which went towards the internal capsule, and the other went to unite with the fibres of the corpus collosum, which join the two hemispheres.

This observance confirms two important facts already described by Prof. Golgi, that is, that the nervous prolongations do not go directly to constitute a fibre without first giving out secondary branches, which are destined to enter into relation with other groups of cells, and further, that the cells of one hemisphere may be in relation with the opposite hemisphere, by means of the ramifications of their nervous prolongations.

IV.—THE NEUROGLIA.

In speaking of the neuroglia I have nothing to add to what has been extensively illustrated by Prof. Golgi, but I approach the subject in order to add some observations in relation to it, solely from the fact that, having in the corpora striata and the thalami found the elements of the neuroglia very conspicuous and abundant, an advantageous field was presented for studying the particulars relating to their structure and relations.

Ranvier, in a communication published in the Reports of the Academy of Sciences for 1878, maintained that this neuroglia is composed of very long, slender fibres, not ramifying, and crossing one another, and that in the points of crossing flat cells are found, resembling those of the common connective. Finally he resumed the subject, stating new facts, from which it would appear, according to him, that the cells of the neuroglia are constituted of simple lamellæ with irregular contour, situated in correspondence with the points of crossing of the connective fibres, which traverse the cells without ever dividing; these fibrillæ are not, he says, in the majority, rectilinear, but describe in the cellular bodies looped curves.

Having repeated these observations, giving exact attention to the method indicated by Ranvier, I isolated and studied very many cells of neuroglia, but with regard to them I have always been strongly persuaded that the

prolongations in question are a true emanation from the cellular body.

On attentively observing these cells, which I treated with arsenic acid and isolated them, there was seen around their edge a line which at one time was rendered clear, and again obscure, according to the movements of the micrometric screw, and seemed to be in continuation with the prolongations.

Now I cannot avoid suspecting that such an appearance, due to the effect of refraction, may be that which gave foundation to the opinion of Ranvier, when treating of the fibrils surrounding the cellular body.

That the cells of the neuroglia are furnished with true and numerous prolongations, is also confirmed by the results of the black reaction, by means of which we may easily clearly observe that the above prolongations go from the body of the cell, radiating in every direction, and ramifying at pretty long distances from their origin. Further, the fact that some of them, by means of large expansions, proceed to be inserted on the walls of the vessels, is in contradiction of the observations of Ranvier. Golgi also, resting on this basis, held that these prolongations serve for the nutrition of the nervous elements.

V.—THE EPENDYMA.

I must lastly say a few words on the structure of the ependyma, which covers the corpora striata and the inner face of the optic thalami. The ependyma is a very thin membrane covered with a stratum of cylindrical nucleate cells, with vibratile ciliæ, the more attenuated point of which dips into the stratum beneath.

By the black reaction I have observed as follows: these cells are set close together, like a hedge; they have the form of a true cone, their most constricted part, which dips into the corpus striatum, is continuous with a very long prolongation which is furnished with small swellings, that succeed each other from tract to tract. These prolongations are not simple; at a short distance

from their origin they give place to many very fine branches, the majority of which form a right angle and proceed parallel to the surface of the corpus striatum, forming a most complicate webbing; many others, on the contrary, detached at an acute angle, go downwards and take the most varied directions. They are not simply lost in the nervous substance, but having come into proximity with vessels of medium calibre they attach themselves to them, by a wide expansion; on a short tract of a vessel we have counted as many as six or eight of these expansions; the behavior of these prolongations with respect to the vessels is very analogous to that of the prolongations of the cells of the neuroglia.

The structure of this epithelium is identical with that described by Prof. Golgi, in the work quoted, in the chapter which treats of the great foot of the Hippocampus, I have alluded to this fact, because I think it is not without interest in its relation to physiology; I leave the interpretation of it for further studies.

VI.—CONCLUSIONS.

All we have related on the fine structure of the corpora striata and the optic thalami may be summarized as follows:

1st. The nervous cells met with in the corpora striata are of two sorts, great and medium; they are furnished with numerous prolongations, among which one only is distinguished by special characters, and this one is the nervous prolongation; all the others correspond to the so-called protoplasmic prolongations.

2nd. The nervous prolongations behave in a double way; some of them, at a short distance from their origin, lose their proper individuality, subdividing in totality and giving place to a very fine nervous net-work (cells of the second type); the others go directly to constitute the cylinder axis of a fibre, but not without giving forth some slender branches, which are lost in the nervous net-work before mentioned (cells of the first type).

3d. In the two nuclei of the corpus striatum, both types of cells are observed, with prevalence of those of the second type; this predominance is however less pronounced in the lenticular nucleus.

4th. In the thalami optici we do not find isolated groups of cells; they are scattered irregularly in the whole mass of the gray substance; they are prevalently large, and many are very similar to those of the anterior cornua of the medulla spinalis; they present, as in the corpora striata, the unique nervous prolongation and many protoplasmic prolongations.

5th. Cells of the first type predominate in the optic thalami, thus differing from the corpora striata.

6th. In correspondence with the twofold behavior of the nervous prolongation, the fibres join with the cells of the corpora striata and the optic thalami, either by directly coalescing with the nervous prolongation of cells of first type; or indirectly losing themselves in the thick netting formed by the nervous prolongations of cells of the second type, together with the lateral branches emanating from the prolongation of the cells of the first type.

7th. The internal capsule contains fibres which unite directly the cerebral peduncles to the corona radiata; others, departing from the peduncle, halt in the ganglia of the base; others again go from these to the corona radiata; finally some, sprung from the cells contained in the thickness of the capsule itself, take an ascending or a descending course.

8th. As regards the protoplasmic prolongations, denying most precisely that they take part in the formation of the nervous net-work, I am inclined from my own observations, to hold that by their fine ramifications they are in relation with the vessels, and with the cells of the neuroglia.

9th. The neuroglia is essentially represented by cells having numerous, long, fine prolongations, ramifying many times; they proceed by means of various expansions to be inserted on the walls of the vessels.

10th. Lastly, the ependyma, which covers the corpora striata and the internal faces of the thalami, is constituted by cylindrical cells, the slenderest part of which is continuous with a prolongation which gives place to very many ramifications, most of which are inserted into the vessels.

PHYSIOLOGICAL CONSIDERATIONS.

To enter into the much-debated question of the functions of the ganglia of the base, would be not only a difficult undertaking, but also foreign to the nature of my work; yet resting on the basis of the anatomical results till the present obtained, I shall offer a few remarks.

We have seen that both in the corpora striata and the thalami, two special types of cells exist, wholly differing in the behavior of their prolongations; we have elsewhere noted that in the corpora striata, and especially in the lenticular nuclei, there is a predominance of cells of the second type, and that, on the contrary, those of the first type predominate in the thalami. Now keeping in view the researches of Prof. Golgi on the spinal medulla, in which he found that in the posterior cornua (of sense) cells of the second type predominate, whilst on the contrary, those of the first type predominate in the anterior cornua (of motion), and therefore resting on this finding, the hypothesis would not, according to him, be unfounded, that the former belong to the sensory sphere, and the latter to the motor, so, in deference to this deduction, I venture to formulate the following hypothesis:

• As both types of cells exist in the corpora striata and the thalami, it may be argued that in both of these ganglia mixed functions are effected, that is, of sense and of motion; but considering that in the former gangliar cells are found to predominate, whose prolongations subdivide complexly, losing their proper individuality, just as those which predominate in the posterior cornua of the spinal medulla, we may, with some foundation, suppose that the corpora striata belong prevalently to the sensory sphere; on the other hand, as we find preferentially present in the

optic thalami, cells whose nervous prolongations, though giving out lateral branches, yet maintain their proper individuality, in order to constitute, in conformity with what takes place in the anterior cornua of the medulla, a fine nervous fibre; there is some ground for holding that functions of motion are prevalently effected in the optic thalami.

Finally, from the mode in which the cells and nervous fibres in the corpora striata and the thalami are brought into relation, we may find a new basis for the law formulated by Golgi, that in all the parts of the nervous system, the specific function, whatever may be its nature, must be effectuated, not indeed by an isolate or individual action of the several gangliar elements, but by an associate action of extended groups of cells.

VII.—METHOD OF PREPARATION.

In order to secure a good black reaction, it is necessary that the pieces be hardened, and not maltreated.

First of all it is well that the brains be taken from young animals, and when possible from fœtuses, for in them, as the nervous fibres are mostly free from myeline, the reaction is more facile.

Before extracting the brain, it is useful to make repeated injections of the bichromate of potass (at two per cent.) into the carotids; the liquid is thus speedily distributed in the nervous texture, and the subsequent hardening becomes more homogeneous. Having done this, we cut pieces, rather large, and place them, for twenty-four hours, in the liquid of Müller, that they may acquire a certain consistency; after this neat sections are made with a razor, until we obtain small bits, from one half to one cubic centimetre, which are passed into fresh liquid of Müller for about eight or ten days, if the temperature be ordinary, but if it is cold it is necessary to leave them in for a longer time. After this they are taken out, to be passed into a mixture composed of eight parts of Müller's liquid and two parts of a solution of osmic acid, of

one per cent.; this mixture serves to accelerate the hardening. It is necessary that the liquid shall be rather abundant and limpid, and the pieces small. At the end of twenty-four hours they may be directly passed into a solution of nitrate of silver of 0.60 per cent., which should be changed in half an hour, because of the precipitate formed. In this last solution it is necessary that the pieces remain from twenty-four to forty-eight hours; but even an indeterminate prolongation does not cause any alteration. After this we may commence examining the pieces by making sections of them. It is necessary that these shall be rather thick, so that we may be able to observe them over a long tract of the course of the nervous prolongations, and they should then be rendered clear, in the following way: After thoroughly washing them in common alcohol, they are passed directly into creasote and are left there until we have obtained an evident transparency; they are then repeatedly washed in the essence of turpentine, leaving them in it for twenty minutes; after this they are mounted in balsam of Canada, without object covers.

By this process the preparations are preserved for a long time, whilst by the classic common method (alcohol rectified, absolute alcohol and oil of cloves) they become yellowed in a short time. This inconvenience may be remedied by putting the preparations into the essence of turpentine until the balsam is removed; the sections are then washed in a new essence and mounted. After this process the preparations turn clear, and they may then be conserved for years.

In closing my labor, I feel it my duty to tender my heartfelt thanks to the illustrious Prof. Golgi, who, during the two years passed by me in his laboratory, has been most liberal in his valuable instructions to me, which he has imparted with so much zeal in all done by me in the institute.

The Medical and Non-Political Care of the Mentally Maimed.

*RESPECTFULLY DEDICATED TO THE CIVIL SERVICE REFORM
ASSOCIATION.*

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“**T**O the victor belongs the spoils,” is a vicious precept, in tribe, nation or individual; in war, in politics or in morals. It is the survival of that other vicious doctrine, the “divine right of kings” to rule, even though it be to the ruin of the governed. The claim is Satanic, rather than Divine. For neither Church, nor commonwealth, nor individual has any right to exact anything beyond the legitimate and absolute essentials, to secure the real welfare of the governed, regulated, or controlled.

Cruelties and torture, needless personal exactions and individual wrongs, are now no longer tolerated, even in war, beyond the absolute military necessity of the conflict. This age of enlightenment and the moral sense of mankind demand that even out of war should come purification and a more perfect peace, which shall secure to the individual a higher liberty and humanity. They discountenance the promiscuously destructive dynamite, and abhor and execrate the heartless fiend, born out of his time and place, who would hurl at mankind this needlessly destructive and uncontrollable weapon.

The age in which we live is progressive toward the right. It aims to secure, not alone what may be secured to the physically strong, but the survival of the morally as well as physically fit to live. It is a maxim of physical and physiological law that the fittest survive. It likewise

seems a moral certainty, though often obscured, that the morally fit must ultimately prevail. It is morally and poetically true that,

"Truth crushed to the earth will rise again,
The eternal years of God are hers."

We should strive to make it practically true, if it is not. Purity and justice strengthen the State, as they do the individual. The descendants of the pure are stronger for the battle of life their ancestors fought, than those of a vice-contaminated heritage, because they are physically stronger. Virtue tends to perpetuate itself by entailing and maintaining vigorous mental organisms, while the brains and frames of the morally profligate degenerate and die, and procreation of the extremely vicious ultimately fails. A virtuous remnant, strong enough in organism to endure and start a new people, thus saved the world from the individual and national vicious decadence of the past, else who would now be living to speak of the decline and fall of the nations of antiquity?

The danger to nations, as to individuals, is that they acquire vice and vicious methods after they grow up.

The divine right of rulers, whether they be kings or the dominant political party, making and executing the laws for a democratic people, should extend no further than that which is divinely right; and if all just governments derive their just powers from the consent of the governed, that consent should never acquiesce knowingly in a personal wrong.

The aim of the voter is self-preservation. If this be true, his aim should likewise be for the welfare of the vanquished, as well as the victor at the polls, and for such as cannot vote—the sick and disabled, the defective, the mentally maimed, as well as for the women and children.

Life is a great battle, and those who cannot fight, or those who fall on the field of battle mentally maimed, should have our care as well as the vigorous, unscathed warriors. They can care for themselves.

The victor of to-day in political conflict may be the vanquished to-morrow, and the valorous citizen rejoicing in reason's proud and haughty sway to-day, may to-morrow be the victim of the laws he may thoughtlessly assist in enacting for the care of the insane and the inebriate, or his children may need the protection of the home for the imbecile, the deaf-mute, the blind or the feeble-minded.

The organized State charities are monumental commemorations of the philanthropic inclinations of the age. The manner in which they are governed indicates the wisdom and true charity of the times. Long ago the hospital on the battle field was made sacred from the carnage of war. The hospital flag floating over any part of a contested field diverts or silences the enemy's guns more certainly than a battalion charge. I would float that flag over every place where the mentally maimed in life's battle are domiciled.

The spirit of the age and its growing philanthropy demands it, and no party should be permitted to stand long before the American people who ignore this just demand. The moans of the mentally mangled victims of political interference with the philanthropic and scientific management of our eleemosynary institutions protest, in piteous tones of helpless misery beyond power of pen or tongue to describe, against this wrong.

Against the injustice of insanity treated by the novice in psychiatry; against idiocy managed by political idiots; against imbecility governed by imbecility in high places; against inebriate asylums managed by inebriates; against deaf and dumb and blind asylums controlled by ignorance and moral and intellectual myopia and strabismus; against professional nonentities and nondescripts, and political hermaphrodites—a large part politician and but little physician; against men whose chief study is the spoils of office, giving little or no consideration to the spoliation and cure of disease, in the name of humanity and our claim to advance civilization, we earnestly protest.

Now these hurt victims of the spoils system cannot speak for themselves—we must speak for and defend them, against the incompetents who defraud them of their rights to skillful treatment; against the ghouls who destroy them by incompetency in administering the teachings of science, by crimes of omission against humanity, and sins of ignorance of knowledge essential to save.

Laws provide life-boats and skillful pilots for vessels in navigable waters, but no provision for the preservation of minds imperiled in our hospitals for the insane, where a new physician, ignorant of the proper care and treatment of the insane, takes charge of an asylum by virtue, not of his meritorious standing in that profession which first unshackled the lunatic and treated him as a maimed friend and brother needing help, rather than the fiend, which the superstition of the time regarded him; but by virtue of heroic party service in ward primaries.

To the victors do not belong the spoils of minds ruined and darkened forever by reason of such neglect of judicious care and treatment as comes from political appointments of false scientists and pseudo-medical men, more skillful in the successful psychological management of a political campaign than in that true psychiatry that restores to the social circle and the body politic deranged minds, which, if not skillfully treated must be lost to both.

It must be remembered that he who falls to-day mentally maimed in the battle of life may yesterday have been one of the staunchest supporters of our political and social fabric, and falling in the line of duty, he is entitled not merely to domiciliation, but to the best endeavors of the State in the direction of his restoration, that he may, if possible become again the supporter of his family and contribute once more to the maintenance of the body politic. In his affliction he claims the State's special attention. It belongs to him as a right, because of former faithful service, not as a mere favor, and the duty is not discharged in assigning him to the tender care of ignorance, and simply giving him a domicile till he passes into intellectual fatuity,

and from there to the dead-house. It is criminal to deny him such needed help as may bring about his recovery, by putting him in the care of incompetent medical skill—political rather than medical skill—thus destroying his intellect by neglect of timely succor.

The wolf protects the lamb by devouring it so that it will not need sustenance, and the State destroys its mentally helpless citizens by a policy of furnishing incompetent medical aid, through needless rotation in office for political reasons, quite as effectually as the wolf destroys the lamb.

The State also, by rotation for political reasons in medical offices, especially in those of superintendents of asylums for the insane, adds largely to the expense of their maintenance by converting, through unskilled management, the acute and curable into chronic incurable wards, doomed thus to die on the hands of the State and be buried at the State's expense, when by a different, a wiser and more humane and just policy, the asylum would be much more speedily depleted by reason of prompt cures in the early stages of a malady which, while it is the most formidable, if unskillfully managed or too long neglected, is at the same time, if skillfully and timely treated, one of the most curable of all the serious afflictions of man.

"Whatsoever ye would that others should do to you, that do ye even so to them" is a principle as essential to sound political practice as to good morals—a truly politic principle for parties, as well as for nations and individuals, because it is honest, and honesty is ever the best policy, as it is the correct principle. It is honest, humane and politic to save the insane by skillful medical care, and purely political rotation in office is dishonest, inhuman and impolitic.

The demands of medicine are so exacting upon her votaries that no time is left the true physician for political party work; and conscientious physicians must, like faithful servants of the Church, keep out of the political arena, at all events from the work of managing the "party machine." Skill in medicine requires a single service, and so rapidly does medical science advance in discovery and the resources

of the healing art multiply, that medical work is now divided into legitimate and recognized specialties, each with adequate demands for a life's earnest endeavors, upon the mediocre medical mind at least. And when a medical political manipulator seeks to take charge of an asylum for the insane, or an inebriate asylum, or a school for the feeble-minded, or a general hospital, medical incompetency is the natural presumption, and the burden of proof to establish his special fitness rests with such an applicant; and when to such a man is confided the welfare of hosts of helpless invalids, mental or physical, it were the part of humanity to the afflicted, and wisdom and economy to the State, to let him abide, after he has, though beginning incompetently become experience-taught, than to replace him by another incompetent, to go over the same unfortunate ground of error and afflict new ignorance and consequent medical neglect on those helpless wards, which the State is in honor bound to see cared for with all the skill which Medical Science gives her most earnest votaries.

The Jurisprudence of Inebriety.*

By CLARK BELL, ESQ., of the New York Bar,

President of the Medico-Legal Society of New York.

IN a discussion like that proposed before the Medico-Legal Society, in which the question is to be considered by such able medical men from the medical side or stand-point, it has seemed to me that it would be of interest to both professions, as well as to laymen, to have the inquiry made as to those relations which attach by law to inebriety, as well in the civil and domestic relations of the inebriate, as in regard to crimes committed by persons, while acting under the influence of intoxicants or while in a state of intoxication.

What, then, is the present legal status of the question?

I shall briefly state (but have neither opportunity nor space to discuss) what I believe to be the law upon the subject; citing and grouping authorities, the civil side first, and the question of criminal responsibility second.

I.—CIVIL RELATIONS.—I. *Intoxication* was regarded by the common law, when complete and characterized by unconsciousness, as a species of insanity. Lord Coke's 4th manner of "*Non compos mentis*" was, "4. By his own act as a drunkard."†

Delirium tremens, which results directly from habits of intoxication, is in law considered to be a form of insanity, and this has been repeatedly held by the courts.‡

It has always been a well-settled rule of law that no person can make a contract binding upon himself, while he is wholly deprived of his reason by intoxication.

* Read before the Medico-Legal Society of New York, November 9, 1887.

† Coke Litt., 248, a; Beverly Case, Coke, 124; Buswell on Insanity, § 295.

‡ Macconchey v. The State, 5 Ohio St. 77; Carter v. The State, 12 Texas App., 500; Buswell on Insanity, § 158; Erwin v. State, 10 Tex., 700.

This would be true as to deeds, wills, all instruments and obligations of every kind.*

This rule is not changed where the intoxication was not procured by the other party to the contract, but is voluntary on the part of the drunkard.†

By the common law, as well as by the New York Statute, a testator must, at the time of the execution of a will, be of "*sound mind and memory*," and it is as requisite to have the presence of a "*disposing memory*," as a "*sound mind*."‡

(b) By common law and by statute law an intoxicated person is thereby rendered incompetent as a witness. The statute law usually classifies such intoxicated persons as lunatics, and the provisions frequently apply similarly to each, and to both.§

(c) In the marriage contract, which in some cases is treated on different grounds from all other contracts, from the necessity of the case, and consequences upon consummation, the sound general rule has been: that if the party was so far intoxicated, as not to understand the nature and consequences of the act, this would invalidate the contract.||

2. The analogy between lunacy and total intoxication, or even habitual drunkenness, is doubtless most marked in the statutes of the various States regarding the care and custody of the person and estates of lunatics, idiots and habitual drunkards.

(a) By English law the Lord Chancellor, as the direct representative of the Crown, has always exercised the right of assuming the custody and control of the persons and estates, of all those who, by reason of imbecility or

* *Prentice v. Achorn*, 2 Paige 30; *Pitt v. Smith*, 3 Camp., 33; *Cole v. Robbins*, Bul. N. P., 172; *Morris v. Clay*, 8 Jones (N. C.), 216; *King v. Bryant*, 2 Hayw., 394; *White v. Cox*, 3 Hayw., 78; *Buswell on Insanity*, § 393.

† *Wigglesworth v. Steers*, 1 Hen. & Man., 70; *Barrett v. Buxton*, 2 Aiken 167.

‡ N. Y. Rev. Stat., art. 2, chap. 6; Parr 2, § 20, 5th ed.; *Forman's Will*, 54 Barb., 174; *Van Guysling v. Van Kuren*, 35 N. Y., 70; *Aiken v. Weekerly*, 19 Mich., 482; *Lowder v. Lowder*, 58 Ind., 538; *Converse v. Converse*, 21 Vt., 168.

§ N. Y. Rev. Statutes; Genl. Stat. Minn., 1878, c. 73, § 9, subd. 1; *Connolly v. Lynch*, 27 Minn., 435.

|| *Johnston v. Browne*, Ferg. Const. Law Rep., 229.

want of understanding, are incapable of taking care of themselves.

Writs *de lunatico inquirendo* were issued in cases to inquire whether the party was incapable of conducting his affairs on account of habitual drunkenness.

The Supreme Court of every American State would doubtless have the right which the Court of Chancery exercised under the law of England in the absence of any statute law. This must be so in the nature of things in American States; the principle has been exercised and adjudicated on in Kentucky, in Maryland, Illinois, Indiana and North Carolina.*

The Legislatures of the various States have vested this power by statutory enactments in various tribunals, for example in New York, by the old law in the Chancellor; in New Jersey in the Orphans' Court; in South Carolina equally to the law and equity side of the courts, and now in New York, where the distinction between law and equity has been abolished, in the Supreme Court, which exercises it.

It will be observed that in many of the American States the habitual drunkard even, is classified and treated under the same provisions, and in the same manner as the lunatic and the idiot, notably in Pennsylvania, New Jersey, Maryland, Illinois, New York and many other States.

Taking New York as a fair illustration of the principle, it has been held by the courts that all contracts made by habitual drunkards who have been so adjudged in proceedings *de lunatico inquirendo* are actually void.† And that the disability of the habitual drunkard continues after the committee has been appointed even when he is perfectly sober and fully aware of the nature and consequences of his acts.‡

It has also been held that *habitual drunkenness*, being

* *Nallor v. Nailor*, 4 Dana, 339; *Colton in re*, 3 Md. Ch., 446; *Corrie's Case*, 2. Bland's Ch., 448; *Tomlinson v. Devore*, 1 Gill., 345; *Dodge v. Cole*, 97 Ill., 338; *McCord v. Ochiltree*, 8 Blackf., 151; *Lathan v. Wiswall*, 2 Ired. Eq., 294.

† *L. Amoureux v. Crosby*, 2 Paige, 422.

‡ *Wadsworth v. Sharpsteen*, 8 N. Y., 388.

established, it is *prima facie* evidence of the subject's incapacity to manage his affairs.*

We may then assume, in considering the medical jurisprudence of inebriety, that the law has always regarded and treated intoxication as a species of mental derangement, and has considered, and treated the habitual or other drunkard, as entitled to the special care and protection of Courts of Equity in all matters relating to his civil rights, his domestic concerns, his ability to make contracts, his intermarrying, and disposing of his property, by deed, gift or devise.

The law has gone farther, for it has thrown around him, its protecting arm and shield, when it is satisfied that he has become so addicted to drink, as to seriously interfere with the care of his estate, and the courts have then come in and taken absolute control, of both person and estate of drunkards, in their own interest and for their presumed good.

Medical men should keep in mind the distinction running all through the law between insanity and irresponsibility. The medical view, that irresponsibility should follow where insanity exists, has nowhere been conceded by the law, and this distinction must be borne in mind in the subject here under consideration.

II.—CRIMINAL RELATIONS.—This brings us to the second question: The relation of the inebriate to the criminal law for illegal acts, committed while intoxicated, which seems more harsh in its practical effect, than the principles which govern him in his civil and social relations, to society and the State.

This seeming hardship, however, is due to the capacity of the drunkard, considered objectively, for wrong-doing. In the one case his position as a civil agent is that of a unit of society merely—one who is, as it were, to be "saved from himself;" in the other case, the criminal aspect of the drunkard, it is the weal of society which is to be conserved and protected.

* Tracy in re, 1 Paige, 589; 1 Rev. St. (2d ed.), Ch. 5, tit. 2, §1.

1. That form of intoxication which results in the total or partial suspension of or interference with, the normal exercise of brain function, is regarded at law as mental unsoundness and sometimes amounts to a species of insanity. It has been held at law, to be a voluntary madness, caused by the willful act of the drunkard, and the decisions have been uniform that where reason has been thus suspended, by the voluntary intoxication of a person otherwise sane, that this condition does not relieve him from the consequences of his criminal acts, or, more carefully stating it, from acts committed by him in violation of law, while in that state.*

(a.) There are decisions which go to the length of holding, that the law will not consider the degree of intoxication, whether partial, excessive or complete, and even that if the party was unconscious at the time the act was committed, such condition would not excuse his act; and, in some cases, judges have gone so far, as to instruct juries that intoxication is actually an aggravation of the unlawful act rather than an excuse.†

But the better rule of law now undoubtedly is, that if the person, at the moment of the commission of the act, was unconscious, and incapable of reflection or memory, from intoxication, he could not be convicted.

There must be motive and intention, to constitute crime, and in such a case the accused would be incapable from intoxication of acting from motive.‡

(b.) The reasons upon which the rule of law rests may,

* *Kenney v. People*, 31 N. Y., 330; 27 How., 202; 18 Abbott, 91; *Loneragan v. People*, 6 Park, 209; 50 Barb., 266; *Freery v. People*, 54 Id., 319; *People v. Porter*, 2 Park, 214; *People v. Fuller*, Id., 16; *People v. Wildey*, Id., 19; *Dammaer's Case*, 15 St. Pr., 522; *Frost's Case*, 22 St. Tr., 472; *State v. Toohey*, 2 Rice Dig (S. C.) 105; *People v. Rogers*, 18 N. Y., 9; *State v. Thompson, Wright*, 617 (Ohio); *Swan v. The State*, 4 Humph., 136; *Com. v. Hawkins*, 3 Gray, 463 (Mass.); *Cluck v. State*, 40 Ind., 264; *State v. Thompson*, 12 Nev., 140.

† *People v. O'Connell*, 62 How. Pr., 436; *People v. Robinson*, 1 Parker Cr. Rep., 619; *Rex v. Carroll*, 7 C. & P., 145; *Dammaer's Case*, *supra*; *Frost's Case*, *supra*; *State v. Thompson*, *supra*; *United States v. Forbes, Crabbe*, 558; *Blk. Com.*, 23; 1 Coke, 247.

‡ *Buswell on Insanity*, § 416, note 6; *People v. Rogers*, 18 N. Y., 9, *Denio*; *Cluck v. State*, 40 Ind., 264; *Kenney v. People*, 31 N. Y., 330.

with great propriety, be considered, and should be carefully studied, before any attempt at criticism is made.

1. The law assumes that he who, while sane, puts himself voluntarily into a condition, in which he knows he cannot control his actions, must take the consequences of his acts, and that his intentions may be inferred.*

2. That he who thus voluntarily places himself in such a position, and is sufficiently sane to conceive the perpetration of the crime, must be assumed to have contemplated its perpetration.†

3. That as malice in most cases must be shown or established to complete the evidence of crime, it may be inferred, from the nature of the act, how done, the provocation or its absence, and all the circumstances of the case.‡

In cases when the law recognizes different degrees of a given crime, and provides that willful and deliberate intention, malice and premeditation must be actually proved to convict in the first degree, it is a proper subject of inquiry whether the accused was in a condition of mind to be capable of premeditation.§

Sometimes it becomes necessary to inquire, whether the act was done in heat of passion, or after mature premeditation and deliberation, in which the actual condition of the accused and all the circumstances attending his intoxication, would be important as bearing upon the question of previous intent and malice.||

(c) The New York Penal Code lays down with precision the provision of law governing the question of responsibility in that State as follows:

§ 22. *Intoxicated Persons*.—No act committed by a person, while in a state of intoxication, shall be deemed

* *People v. Garbutt*, 17 Mich., 9; *Commonwealth v. Hawkins*, 5 Gray, 463.

† *People v. Robinson*, 2 Parker cr., 235.

‡ *Buswell on Insanity*, § 450; *Buswell v. Commonwealth*, 20 Grattan, 860.

§ *Buswell on Insanity*, § 450; *Hopt v. People*, 104 U. S.; *Penn. v. McFall*, Addison, 255; *Keenan v. Com.*, 44 Penn. St., 55; *State v. Johnson*, 40 Conn., 136; *Harte v. State*, 11 Humph., 154, and cases cited in note to *Buswell on Insanity*, § 450.

|| *Kelly v. Commonwealth*, 1 Grant (Pa.) 481; *Patte v. The State*, 9 Humph., 63.

less criminal by reason of his having been in such condition. But whenever the actual existence of any particular purpose, motive or intent is a necessary element to constitute a particular species or degree of crime, the jury may take into consideration the fact that the accused was intoxicated at the time, in determining the purpose, motive or intent with which he committed the act.

(d.) Voluntary intoxication, though amounting to a frenzy, has been held not to be a defence when a homicide was committed without provocation.*

(e.) *Delirium tremens*, however, a condition which is the result of drink, and is remotely due to the voluntary act of the drunkard, has been held to be a defence to acts committed while in the frenzy, similar to the defence of insanity.†

(f.) It has been held that when inebriety develops into a fixed and well-defined mental disease, this relieves from responsibility in criminal cases, and such cases will be regarded and treated as cases of insanity.‡

(g.) It may now be regarded as a settled rule that evidence of intoxication is always admissible, to explain the conduct and intent of the accused, in cases of homicide.§

(h.) In crimes less than homicides, and especially where the intent is not a necessary element to constitute a degree or phase of the crime, this rule does not apply.

The practical result however, in such cases, and in those States where the latter provision of the New York

* *People v. Rogers*, 18 N. Y., 9 (reversing 3 Pack., 632); *Kenny v. People*, 3; N. Y., 330; *People v. Robinson*, 1 Pack., 649; 2 Id., 235; *People v. Hammil*, id., 223; *People v. Batting*, 49 How., 392; *People v. Eastwood*, 3 Park., 25; 14 N. Y., 562; *State v. Harlow*, 21 Mo., 446; *Shanahan v. Conn.*, 8 Bush, 403; *Rafferty v. People*, 66 Ill., 118; *Charel v. State*, 31 Ga., 424; *Humphreys v. State*, 45 Id., 190.

† *O'Brien v. People*, 48 Barb., 274; *Real v. People*, 55 Barbour, 551; 42 N. Y., 270; *Willis v. Com.* (Va.) 22; *Albany Law Journal*, 176; *Macconchey v. State*, 5 Ohio, § 77; *Carter v. State*, 12 Tex. Ap., 500; *Buswell on Insanity*, § 158; *Erwin v. State*, 10 Tex., 700.

‡ *Loneragan v. People*, 6 Park., 209; 50 Barb., 266; *O'Brien v. People*, 48 Barb., 74; *People v. Williams*, 43 Cal., 344; *U. S. v. Draw*, 5 Mason, 28; *State v. McGonigal*, 5 Harling., 510.

§ *Loneragan v. People*, 6 Park., 209; 50 Barb., 266; *People v. Hammil*, 2 Park., 223; *People v. Rogers*, 18 N. Y., 9.

Penal Code has not been adopted, is to leave this whole subject to the judges, who fix the details of punishment. This is a great public wrong, because each judge acts on his own idea, and one is merciful and another harsh. If it is placed by law in the breast of the judges, it should be well-defined and regulated by statute. Lord McKenzie well says: "The *discretion* of a judge is the law of tyrants."

3d. It will be observed that the law has not yet judicially recognized inebriety as a disease, except in the case of delirium tremens—above cited—and hardly even in that case.

It is for publicists, judges and law-makers to consider the claim now made, that science has demonstrated inebriety to be a disease.

If this is conceded, what changes are needed to modify the law, as it at present stands, so as to fully preserve the rights of society, in its relation to the unlawful acts of inebriates, with a proper and just sense of the rights of the inebriate himself?

This contribution is made from the legal stand-point purely, and is designed merely to open this interesting discussion for both professions, to which such names as Dr. Norman Kerr, Dr. T. D. Crothers, Dr. Joseph Parrish, Dr. Charles H. Hughes, Dr. Wright and others, will contribute the medical view, a discussion, which I hope may arrest the thoughtful attention of the students of the subject throughout the world.

The Scientific Study of Inebriate Criminals.*

By T. D. CROTHERS, M. D.,

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THE question of the sanity or insanity of an inebriate criminal in court has so far been decided on theory, law and precedent. Medical testimony is made to conform to legal theories and court-rulings, irrespective of all other conclusions. Courts have dictated to science what the test of responsibility should be, and given definitions, and explanations to abnormal conduct, requiring the medical witness to bend his views to such theories. Not only has the law laid down arbitrary lines, as if they were fixed principles of nature, but it has assumed to decide all questions of brain health on the same basis, accepting scientific evidence only so far as it sustains such theories.

Medical testimony in courts indicating insanity, that is not sustained by overwhelming evidence, comes under the suspicion of prejudice in the prisoner's favor, or incompetency of the witness. The practical results from such errors is a degree of confusion, injustice, and great wrong, that is a sad reflection on the intelligence of both the medical and legal professions. My object is to call attention to the *inebriate criminal*, and to indicate the scientific methods by which such cases are to be studied, and to show some errors which have followed from the failure to understand the facts in these cases.

The inebriate appears in court as a criminal, the crime is admitted, and the question is raised of his mental soundness. It is asked: "Did the prisoner at the

* Read before the New York Medico-Legal Society, November 9th, 1887.

time of committing the crime realize the nature and consequences of his acts and conduct? Had he the power of self-control to have done otherwise had he so willed? Was the inebriety and crime voluntary and with motive? or involuntary and without motive?" From the answers to these inquiries, the mental health and condition of the prisoner is determined.

The scientific expert who is called to answer these inquiries should approach the problem without any knowledge of the legal rulings and questions of responsibility of such cases, held by courts. His province is simply to examine the facts and the conclusions which they seem to indicate which are in harmony with the laws of nature.

As a scientific expert of the phenomena of the mind and its morbid manifestations, he is not called to determine questions of legal responsibility, but must point out the facts, show their accuracy and meaning, no matter what the consequences or conclusions may be. This cannot be ascertained from newspaper reports, statements of counsel, or slight examination of the prisoner. Such a study to be accurate should begin and follow a general order of facts, as follows:

1. Legally the crime is first studied, but medically the order is reversed. First, study the history of the criminal, then the crime. Often a history of the criminal distinctly indicates the nature and character of the crime. The *heredity* of the inebriate criminal should be the first object of study. From a knowledge of the defects and diseases of the parents, of their strength, conduct, and character, a general conception can be had of their descendants.

2. A study of the prisoner's early growth, culture, training, nutrition, surroundings, and occupation, reveals many facts indicating the brain capacity or incapacity to act normally.

3. The inebriety of the prisoner still further points out his mental condition. The origin, duration and char-

acter of the drink impulse are most important facts for minute study.

4. The nature and character of the crime, the associate circumstances, including the inebriety, all bring additional evidence pointing out the actual mental state of the prisoner. From a systematic study of this kind, the prisoner and his crime will appear clear and distinct. Not as an outburst of vice and wickedness, but as the natural sequence of a long progressive march of physical events. Inebriety and criminality are not accidents, but the products of causes, the outcome of conditions, which have grown up in obedience to laws, that move on with progressive uniformity. This is illustrated in the history of every case, which can be followed along a continuous chain of events, dating perhaps from heredity, degenerate growths, up to inebriety, then to crime. Both the crime and inebriety are but symptoms of disease and degeneration, culminations of events whose footprints can be traced back from stage to stage. Attempts to apply dogmas or free-will, and show at what point powers of control existed or were lost; where consciousness and unconsciousness of events joined, or where sanity and insanity united, is to attempt the impossible. To the scientific man, the knowledge required to determine these facts, extends far beyond the widest range of human intellect.

In the efforts to determine the mental soundness and brain health of a prisoner in court, there are certain general facts already established that will serve as a foundation from which to date more minute and accurate studies.

1. The inebriety of any person is in itself evidence of more or less mental unsoundness. Alcohol used to excess, and to intoxication, is always followed by changes of brain circulation and nutrition. Degrees of mental impairment and paralysis always follow, whether recognized or not.

2. In a large proportion of cases inebriety is only a

symptom of slow, insidious brain disease, particularly general paralysis; also of many forms of mania, dementia and other brain degenerations.

Here, notwithstanding all appearances, the inebriate is diseased and unsound mentally.

3. When crime is committed by inebriates, growing out of the inebriety or associated with it, the probability of mental disease and some form of insanity is very strong. Inebriety always favors and prepares the way for the commission of crime.

4. Whenever it appears that persons have used spirits to intoxication for the purpose of committing crime, this is evidence of a most dangerous form of reasoning mania, requiring the most careful study.

From these general facts, which should govern the expert in such cases, I turn to indicate the great injustice which has followed in some late prominent trials, from the failure to realize and apply these principles.

Peter Otto, a chronic inebriate, shot his wife in a drink paroxysm. On the trial the insanity of the prisoner was raised. Several medical experts testified to his sanity, and explained his unusual conduct as that of a simulator. He was found guilty and sentenced to death. An appeal was taken, and a year later I examined this case. Beginning with heredity, the prisoner's grandfather on his father's side, and grandmother on his mother's side were both insane; the former died in an asylum. His father was a paroxysmal inebriate, and a morose, irritable man, who died in Andersonville prison. His mother, still living, is a passionate, half insane woman, being irritable and suspicious, and drinks beer. One of her sisters died insane. The prisoner's early life was one of great wretchedness and neglect—in the street and saloon. He was ill-nourished, and drank beer at home and wherever he could get it. At ten he was injured on the head, and was treated in a hospital for several weeks. At puberty he drank to intoxication and gave way to great sexual excess. Later, he was married in a state of great intoxi-

cation, and unconscious of it at the time. For ten years before the crime he drank to excess as often as he could procure money to pay for spirits. He grew quarrelsome, suspicious, and very irritable, and at times acted wildly. He had the common suspicion of his wife's infidelity without any reasonable basis. He had tried to kill himself on two different occasions by the most childish means. He was injured again on the head and complained of bad feelings ever after. He was arrested on six different times on complaint of his wife and mother for violence to them when intoxicated, and was confined in jail from ten to sixty days. Two months before the murder he was placed in jail suffering from mania. The jail physician called his condition alcoholic insanity. The murder followed, while drinking to great excess, and grew out of a quarrel with his wife. He made no effort to run away or conceal himself. In jail he developed religious delusions of frequent personal conversations with God. Heard voices and saw lights which he interpreted as God's messages to him. His appearance and conduct indicated great mental enfeeblement. My conclusion of insanity was sustained by the history of the heredity, growth, surroundings, inebriety, general conduct, and delusions. A special commission of physicians decided that he was sane and fully responsible, and on this conclusion he was executed.

The *second case* was that of Charles Herman, a chronic inebriate, who, while under the influence of spirits, threw his wife down on the floor, cut her throat, and placed the body on the bed. That and the two following nights he slept in the bed with the dead body, going out in the morning and returning at night, acting as usual, drinking, and manifesting no excitement or consciousness of what he had done. Three days later the body was discovered, he described all the circumstances of the homicide, gave no reason or explanation, except that she would not stay in when he wished her.

The defence was insanity from spirits, and alcoholic trance. This was denied by the medical witnesses for the

People. From my study of the case the following facts were undisputed:

1. Herman was a German, forty-two years of age, a butcher by trade. No hereditary history was obtained. He was very reticent, and could give no clear history of his past.

2. About twenty years ago he began to drink to excess. When under the influence of spirits he was sullen, irritable, and suspicious of everyone; his character and conduct was changed; he had suspicions of his wife's infidelity. When sober no reference to this delusion was made; he seemed to be a kind-hearted man.

3. For the past five years he has greatly changed in every way. He did not work much, tramped to Chicago and back, drank at times to excess, was very quarrelsome with his wife and others when under the influence of spirits. Was rarely stupid when intoxicated, but was heavy and dull. A week before the murder he drank more than usual.

4. The crime was committed automatically and in the same way he had been accustomed to kill animals. He seemed oblivious of the nature and character of the crime, and made no efforts to conceal it or escape, but went about as usual, apparently unconcerned. This same indifference continued up to his execution. As in the former case, a commission decided that he was not insane, and was responsible. Both his inebriety and the peculiarities of the crime were ignored in this conclusion.

Case three was Patrick Lynch, a periodical inebriate, who killed his wife in a similar indifferent manner. The defence of insanity was urged, and opposed by the same confused medical testimony. A marked history of heredity, embracing insanity, inebriety, and idiocy, was traced back two generations. The prisoner grew up in bad surroundings, was an inebriate early in life. At the age of thirty he was a periodical inebriate, with a drunk period of twelve or fifteen days, during which his conduct was markedly insane. He killed his wife by striking her on the head with a board. under no excitement and perfectly cool, then went to the

station and gave himself up, giving no reason for the act. He had not quarreled with her or exhibited any anger. He had delirium tremens three times at intervals before the crime was committed, and had manifested marked changes of character and conduct. When sober he was very kind; when drinking he was treacherous, violent, and dangerous. He was found guilty, but finally sent for life to prison.

The *fourth case* was that of William Enders, an inebriate, who rushed out of his house and shot a passing stranger, without a word or provocation. The history of epileptic and alcoholic heredity was in the family in both parents. His early life was in a poor-house, and later an errand boy in a hotel. At twenty he was an inebriate, with distinct drink paroxysm. These were attended with intense delusion of persecution.

The crime was committed during one of these attacks. The defence was insanity, but the jury decided him guilty, on the testimony of the medical witnesses for the prosecution, and he was executed.

These four cases are not uncommon or different from many others appearing in court every week. I have presented them to show both the failure of medical testimony, and a correct legal conception of such cases. The medical testimony in such cases fails in not making an independent research in each instance, to ascertain the facts, no matter what the conclusions are. The physician goes into the court-room with the expectation of giving a semi-legal opinion, along some line of theory and law; he attempts to mark out conditions of responsibility and fails, hence his testimony is confusing and worthless.

In each of these four cases, the medical evidence was founded on theory and not on the facts of the case. The legal treatment was also imperfect and unjust for the same reason.

The teachings of all scientific research are in unison to-day, concerning the disease of inebriety, and also that this disease of inebriety may merge into criminality. It is obvious then when they are found associated, only a full

exhaustive inquiry and study of the facts can determine the sanity of the case.

The questions of the sanity and insanity of inebriate criminals must be decided by an appeal to the facts, gathered by scientific experts; and not from any theological or judicial theory, however ancient in history or universally accepted by lawyers and scientists.

The question of responsibility in any given case, must be answered exclusively from its scientific side, apart from all legal conceptions and tests in such cases. The inebriate criminal belongs to that obscure class of border line cases, who must be treated both legally and medically from the facts in their history.

From every point of view it is apparent that the present treatment of the inebriate criminal is far behind the scientific teachings of to-day. The time has come to put to one side all midæval theories of the vice and voluntary nature of inebriety, and study each case more thoroughly and from a wider range of facts, estimating the degree of sanity and responsibility by physiological, pathological, and psychological methods.

SYPHILITIC INSANITY.

By D. F. KINNIER, M. D., New York City,

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A. F., aged thirty-five years, a native of the United States, and has resided in this city for the past ten years. She was strong and healthy during her early life; having no illnesses except those commonly occurring in childhood. She contracted syphilis from her husband; and now presents typical signs of that disease. She is in a weak, feeble and excited condition; is obliged to be kept in bed by slight restraint; and to be quieted by sedative treatment. She has had miscarriages, and two children born alive, who died when a few months old, of evident signs of syphilis. She was confined, some weeks ago, of a living child, since which time, symptoms of insanity have become noticeable, assuming the form of melancholia with periodical attacks of excitement. Her tongue is swollen, thickly coated, tremulous, fissured and indented, from pressure against the teeth, which are covered with *sordes*. She has typical mucous *plaques* on the tongue. The buccal mucous membranes are dry and parched, and there is extensive faucial inflammation.

The cervical and axillary glands are enlarged; and there is a specific rash over her body.

She has indolent ulcers on her hips, and lies in bed with her legs flexed upon her thighs, and, if moved, she screams as if in pain. There are signs of active inflammation in the knee joints, which are swollen, erythematous and very tender on slight pressure. Over the anterior surface of the tibiæ are well-marked *bullæ* of variable size, which are typical representations of the bullous syphilodermata. These *bullæ* are circular or oval in form, and distended with a clear watery fluid, which later becomes cloudy and thick, owing to its admixture with pus

and blood. The *bullæ*, on becoming distended with fluid contents, break and dry up, giving rise to scabs and crusts of a yellowish and greenish color. Beneath the crusts will be seen erosions of an ulcerous nature with thickened and raised borders and exuding an ichorous fluid. Her pulse varies from 100 to 130. There is marked syphilitic pyrexia, and her respirations are increased and labored, with turbulent action of the heart, which, upon auscultation, mitral insufficiency is detected. Her pupils are irregular. A mental consideration of her symptoms reveals the fact that she is troubled with hallucinations of sight and hearing. She talks in a rambling and incoherent manner. She is mistaken in the identity of persons, and any footsteps she hears, she imagines to be those of her former associates and calls out their names. She developed delusions of conspiracy against her, and imagined that her system was poisoned with a foul disease for which there was no remedy. She became dangerous to her children, and suffered from delusions of a depressing nature. She had periods of marked mental excitement with motor restlessness and tremulousness, passing into a delirious state, which, gradually diminishing, was followed by mild attacks of melancholia. Her articulation was tremulous, very much like that observed in cases of paresis. She had several marked epileptic seizures, which were probably due to the specific disease having extended to the brain.

Treatment being of no avail, she gradually failed and died. In the above narrated case, I think death was hastened by the specific poison having extended to the cerebral tissues. Her epileptic seizures I would attribute as due to syphilis, because, upon the closest investigation, I failed to obtain any evidence of the patient having had epilepsy, or having been hereditarily predisposed to this morbid condition. This disease, having manifested itself at so late a period of life and after she had contracted syphilis, I think there are sufficient grounds for supposing her epileptic seizures to be due to the extension of the syphilitic virus to the brain tissues. That brain syphilis

exists there can be no doubt, as the brain is one of the organs most frequently attacked by this disease.

When syphilis does involve the brain it has a particular predilection for the dura mater, giving rise to gummatous masses between the layers of this membrane, which press externally on the internal tables of the cranium, and inwardly on the brain substance, giving rise to a varied train of symptoms.

Syphilis attacks the calvarium, especially the frontal bones, which, becoming diseased, abscesses are developed, the contents of which form thrombi and occlude the cerebral sinuses. Although syphilis frequently attacks the cerebral tissues, especially the dura-mater, yet it does not limit itself to this membrane, but involves, in its course of destruction, the basilar artery, as also those which go to make up the circle of Willis. In the above-mentioned case, it was evident, judging from the symptoms, that there was syphilitic inflammation of the membranes, which gave rise to arteritis and irritation in the vessels and contiguous parts of the brain tissue. Fournier, Baumgarten, Friedlander and other eminent syphilographers, who have made a careful study of this subject of brain syphilis, assert that when syphilis attacks the cerebral vessels, it begins by affecting the inner coat or intima, and that the disease may extend through the intima by dissecting its layers and giving rise to aneurismal dilatations of the cerebral vessels. Then again, there is produced a thickening of the intima inwards, which produces occlusion of the caliber of the vessels, to which diseased condition the term *endarteritis obliterans* is given, on account of the thickening of the vessel walls, or plugging-up of the vessel by a thrombus. When syphilis attacks the brain and fissures of Sylvius, we have symptoms of paralysis and aphasia produced in proportion to the extent of the parts involved. These symptoms disappear as the patient recovers from the specific effects of the disease. The treatment adopted in this case consisted of tonics, a nutritious and well-regulated diet, moderate use of stimulants,

together with mercury and iodide of potassium. The mercury when not given by the mouth, was given by inunction or hypodermically. The inunction treatment was carried out faithfully and systematically, but did not produce the desired and speedy effects wished for. The plan of treatment adopted was to take a piece of mercurial ointment, about the size of a pea, and rub it into the inside of the forearm, arm, chest, on the surface of the abdomen, on the thighs and legs for about five minutes at a time. This mode of treatment, however, was abandoned after a fair trial, and I resorted to another method of treatment, namely, hypodermic injections of mercury, which seemed to me to produce a more ameliorative effect on the disease. The form of mercury used was corrosive sublimate. In giving the injections I have prepared a solution, containing one ounce of water and six grains of corrosive sublimate, and of this solution, I inject five minims or one-sixteenth of a grain, and gradually increase the amount to one-tenth of a grain. Objection has been raised to this form of treatment, on account of the injections producing pain, induration, inflammatory swellings, and, occasionally, abscesses. That these inconveniences occur, is true; that they can be prevented by being cautious is equally true.

In beginning the treatment of syphilis by hypodermic injections it is important to use a proper syringe, and the kind I prefer, is one made of glass, because the mercury will not corrode it as is the case if a metal syringe be used. A short needle will not answer for these injections, because the needle may not penetrate sufficiently into the integument, and as a consequence, the mercurial solution will not be absorbed and inflammation may follow as a result.

But this objection can be overcome by using a long needle and inserting it into the cellular tissue which is traversed by many absorbent vessels, which readily take up the mercurial solution. In giving these injections, I always begin with minute doses, and gradually increase

the amount injected until a full mercurial impression is obtained, and then care should be used and only give sufficient mercury to keep the system under a mild influence of the drug until the disease has disappeared.

Great caution must be used in the treatment of syphilis by hypodermic injections, and the amount given should be regulated according to the idiosyncrasies of the patients.

The parts I usually select for giving injections, are the lateral regions of the back, especially the infra-scapular and sacral regions; as these parts are well supplied with subcutaneous cellular tissue, and rapid absorption takes place.

My experience in the treatment of syphilis, by this method, is limited to a small number of cases, and the many objections which are raised against this mode of treatment have occurred to me, but by using great precaution in the kind of syringe used, and always having it in a cleanly condition, and using precautions in giving the hypodermics, I have overcome most of these objections, and I am much pleased with results of this method of treatment.

Iodide of potassium, in gradually increasing doses, was given, beginning with ten grains, three times a day, which I believe to be the best method of giving this drug in syphilis of the nervous system.

Iodide of potassium is quickly eliminated from the system, and, hence, the advisability of giving this drug in the manner mentioned, in order that the constitutional effects of the drug may be obtained. I prefer to give it after meals and largely diluted with water. When very large doses are to be taken, as for instance, three or four drams in the twenty-four hours, I consider it preferable to dissolve this amount in about a half-pint of water, and allow small draughts to be taken at frequent intervals.

Taken in this way, I am satisfied that the good effects of the drug will be obtained, and that there will be less liability of the stomach being disturbed than if large doses be given at once.

HOSPITALS FOR THE INSANE.

VIEWED FROM THE STAND-POINT OF PERSONAL EXPERIENCE, BY A RECOVERED PATIENT.

By JANET E. RUVTZ-REES, Brookside, N. J.

ONE of the most encouraging features of our civilization is its growing humanitarianism, and prominent amongst many such indications, is an increased interest in the fate of the insane.

Mental disease is no longer a crime in the eyes of intelligent people, and cases in which an afflicted relation is cruelly used because "wanting," and chained up, beaten and starved, are very rare.

The light of publicity throws our insane asylums open to the criticism of the benevolent, and a marked change for the better is evident in their management. Although cases of carelessness, and possible harshness of treatment, occasionally come to light, as in the recent disclosures in connection with Blackwell's Island, there is no reasonable doubt that on the whole, insane patients in our State institutions are kindly and humanely treated.

A residence of over two years in an institution which is generally recognized as one of the (if not the) best in the world, has qualified me to offer an opinion upon the interior management of a State asylum, and the effect of the course of treatment pursued upon the patients themselves.

Our knowledge of mental disease is still very limited. Much, indeed most of it, is attributable, in the opinion of skilled physicians, to physical causes, and the care of the general health is always the first consideration. To insure this, the sanitary arrangements of our hospitals receive great attention, and next to them in importance are the food and regulations of such establishments.

The doctors in charge of the patients are specialists, and the attendants are presumably selected with regard to their sympathetic fitness for their position. One critical remark in regard to them may be fairly made. They are for the most part young and inexperienced, and however willing to fulfil the spirit of their duty, are often, from this cause, not well qualified to do it. In the Morris Plains Asylum, the management is distinguished by liberality and care; the doctors are gentlemanly, kind and humane, the attendants considerate and not ungentle. The days succeed each other with clock-like monotony, and the fixed rules of the institution are rigidly observed.

The asylum receives from eight hundred to a thousand patients, and the residents under its roof, including the warden and doctors' families, officers of the asylum, and work-people in connection with it—number over twelve hundred. The male and female patients occupy different wings, and meet only at the weekly winter receptions. There is a chapel in the institution, in which service is held once every Sunday, and where, during the winter, a weekly song service is attended by all who wish it. There is absolutely no difference in the treatment of State or paying patients. They are distributed throughout the wards, not with relation to length of their purse, or influence of friends, but in regard to their mental condition. Wealth can of course secure extra luxuries, but not greater care or attention to necessary requirements. There are, on every good hall, extra wards, where complete privacy is possible, and where wealthy private patients can be served exactly as if in their own homes; these wards comprise a double bed-room, sitting-room, dining-room and bath-room. The ordinary halls contain fifteen or sixteen single and double rooms, and accommodate from eighteen to twenty-five patients. There is no overcrowding on the good halls; but in some of the less desirable ones, more than two beds are in some of the rooms, and five or six are placed in the exercise hall, which opens out of the ward. Every hall is in charge of two attendants,

one of whom has to wait on the patients, take care of their property, etc.; while the other is in the dining-room and attends to the table. Both are responsible for the order and cleanliness of the ward. The doctors visit every hall twice in the course of the day, and visitors are freely admitted between the hours of nine and five every day except Sunday.

Punctuality and order are virtues in the establishment, and the days pass on in a monotonous routine, to enliven which everything possible is done by the managing committee. During the winter, there are weekly receptions and entertainments, card parties, lectures and concerts, and every fine day the patients walk out. Those who wish it work in the sewing-room, laundry or kitchen, but nothing is asked or required positively, even of the State patients. Noisy and unreasonable patients are placed in the back wards, and in less-desirable halls, where there is much unavoidable discomfort, arising from the disorderly conduct of the patients themselves, but not, usually, from any want of kindness or care on the part of the attendants. The hours of the institution are early. The steam whistle rouses all at five in summer and six in winter, and bedtime, in the worst wards, is at eight, in the convalescent halls at nine.

In all this it is clear that what may be advanced in regard to the question of treatment of the insane is based upon an experience of the best kind, and upon an observation of the result of the most experienced and kindly treatment of the incapable inmates. After such an experience my decided opinion is, that State asylums, as at present conducted, are a mistake, and this for an obvious reason.

Mental disease is infectious. No one who has studied insanity will question this statement. Its obvious truth is established by an increasing knowledge of psychology, by the recognition of the importance of telepathy, and by a growing conviction of the germ of truth that lies at the root of all faith and mind-cures, Christian science cures and the like. Insane asylums, congregating under one roof,

hundreds of the mentally afflicted, tend to spread the disease. Insane patients should be treated, as far as possible, like those suffering from contagious bodily disease, and separation and isolation, as far as it is possible should be obtained.

To put one melancholy person into the society of another melancholiac deepens the shadows of both. Every one realizes this in every day-life. The atmosphere of a cheerful, well-balanced person is clearly infectious. The very presence of such a one gives cheer, and on the other hand, the society of one bilious, ill-conditioned patient, is contaminating to the whole ward. Attendants in insane asylums, shut up for weeks with eighteen or twenty mentally diseased persons, must take a diseased view of life, and every sufferer, or observer of suffering, is aware that it is the parent of egotism. We all seek in others the symptoms that distress ourselves.

In every one's experience comes the time when a fear for himself awakens an interest in the same fear in another. The consumptive patient reads everything relating to his complaint, and eagerly listens to the symptoms as felt by others. The man with an affected liver suddenly realizes that things which once had no concern for him possess profound interest, and finds himself reading quack advertisements and watching obituary notices. His judgment of everything is affected by his interest in his own case. And this is ten times more true of those who are mentally afflicted. Mind, in such cases, acts very obviously on mind, and the recovery of mental clearness and balance is necessarily retarded by constant companionship with those whose mentality is diseased. There is another, and perhaps less readily acceptable reason against the congregation of insane patients in regular asylums and hospitals; yet it is one of the truth of which I am profoundly impressed. It is, that the influence of mental disease hangs about the room vacated by a patient, just as the infections of fever cling to bedding and clothes. It is my firm conviction that a hall tenanted by insane sufferers is permeated with

unhealthy influences, which act and react upon the inmates. No one's view of life in a large ward is cheerful or normal. Delusions occupy the mind, to the exclusion of all healthful interests. Conversation is impossible. Monstrous ideas find birth, and the very regularity and monotony inseparable from a well-conducted institution, tend to increase the helplessness of the patients. Self-reliance, the first step in mental recovery, and a healthy will, are impossible virtues in a home where every question is decided without reference to the individual, where, the doctor's fiat has the omnipotence of a papal bull, and where an order once given must be carried out in the face of death itself.

If the immense sums granted by legislation for these institutions for crowding the mentally afflicted together, could be judiciously expended in isolating them as far as possible, I believe insanity would be found far more curable and that its increase would be checked.

This could be managed more easily than would be supposed, by boarding the mentally afflicted in responsible families within reach of a reliable physician. Eight hundred State patients distributed throughout the cities and towns of the country could be as well, and better, cared for than they are under one roof, at an expenditure which includes the cost of a gigantic institution.

In England and France there are many families who receive insane patients by legal permission, guaranteeing them the care and comfort of home life under the supervision of a physician. Legal commissioners visit these families at intervals, but more often than not the fact is not even known in the neighborhood, and thus the insane person is treated in all respects as if sane. All special treatment of disease has its bad side. The attention of the specialist is necessarily concentrated upon one point and his mental classification of every person he meets bears relation to it. Delusions are very vague things. The harmless person suffering from them, can be more effectually treated by and amongst those who have none,

than in company with others equally deluded in another way.

If homes could be substituted for institutions, and take the place of hospitals in every possible case, it would then limit the number for whom absolute incarceration was a necessity to the worst cases. For these, temporary buildings would be far better, than those imposing structures of solid masonry, which vie with prisons in durability.

Some years ago, the plan of temporary hospitals for infectious and contagious disease was warmly advocated, and it certainly might be advantageously adopted for insane asylums. The herding together of criminals is bad, under the best sanitary arrangements, but the congregating of those afflicted with mental disease under one roof is worse. The place becomes impregnated with disease, and should be pulled down, and rebuilt at intervals. The unhealthy moral tone of State asylums is aggravated by the fact that criminals are frequently confined in them, and that a low morality is generally inseparable from insanity. If the promised investigations into the management of our asylums are supplemented by a suggestion for such a change of plan in regard to them as has been indicated, it cannot fail of good results, for this opinion is based upon an experience of one of the best asylums not only in this country, but in the world, and the conclusion arrived at could only be emphasized by a closer acquaintance with the interior management of less favored ones. The plan is the same in all, and it is to that that exception should be taken. The details of management vary, and are dependent upon the characters of the men selected as responsible officers in such institutions, and with that the public are closely concerned; but no sense of duty, or faithfulness in fulfilling it, can compensate for evils which belong to the plan itself. The perfection with which it is carried out, will unfortunately only emphasize the objections, which have their root in the plan as a plan. Another great objection to asylums as at present managed, is the fact, that the warden, and not the physician, is the con-

trolling person. Obviously all important details in the management of such institutions should be under the direction of the medical superintendent.

When the question of the treatment of the mentally incapable is based upon the possibility of isolating them as far as possible from an unhealthy mental atmosphere, a great step will have been taken in the right direction. It is no longer necessary to plead for humanity in their care, but for common sense in a consideration of their peculiar needs. By placing them in homes, in which at the outside not more than three or four patients should be received, careful supervision would be insured, and they could have the advantages of separation from the cause of the disease, or from family cares, which is often the first necessity, and yet enjoy a certain freedom from restraint which is a great element in possible recovery. Treated as sane, there would be more hope of their speedy restoration to a healthful mentality, and they would be spared the terrible depression and contagion of association only with the afflicted, which is inevitable in all insane asylums and large hospitals.

IDIOTS SAVANTS.*

By E. S. BOLAND, M. D.

GENTLEMEN: This boy, whom we may call George, represents, we believe, the class called Idiots Savants, in whom some one faculty is strangely developed, while at the same time the general mental capacity is below the average.

His strong point is that he can answer questions as to calendar dates in his past life and for a year or two in the future. Occasionally he makes a mistake, but can usually correct it when given a second trial. His stammering may impress you as a *ruse* to gain time, but I know it is not so.

If the gentlemen will ask him the day of the month any special week-day comes on, back to 1875, he will tell them; or if they will ask him the day of the week that any particular day of the month falls on, he can tell.

PERSONAL HISTORY.

George is almost sixteen years old. Born in Vermont. He is the second child of his mother, a healthy, intelligent woman of twenty-five years at the time of his birth. Husband twenty-nine years of age and intelligent, and of "good health until disabled in the army." Parents not related. Their first child died at birth and their third is now a healthy, intelligent girl of thirteen years.

George's paternal grandmother had "canker rash" (scarlatina?) at the age of six, and has been deaf and dumb since. Deafness said to run in the mother's family too. His delivery was normal, at full term, but he was found to have "cataracts" at birth. Rather weakly till ten years of age, though strong and healthy since. Began to walk at three and to talk at four. Has always

* Read before the N. E. Psychological Society, October 11th, 1887.

been a nervous, active boy. Senses, except sight, seem normal. Sees with left eye only. Pupil eccentric. Vision very limited in range and distinctness, though he can distinguish the primary colors. Stammers in talk, and more especially when excited. Dresses and feeds self. Is fairly well grown. Voice still childish.

Has never had convulsions as a child, nor epilepsy since. He can pick out a few airs on the organ or piano from hearing his sister play. He can count to any number, is fairly prompt at primary mental arithmetic, but has never learned to read, sight being too defective if his capacity had admitted. He understands a command, and when at home can do an errand to any of the neighbors, and do such chores about the house and farm as bring in wood, husking corn, etc. Seems much attached to his home, where he is still an object of much solicitude to his parents. Is quick-tempered.

George was kept at home until he was fifteen, when he was sent to the Perkins Institute for the Blind, Nov., 1886. Here the Superintendent found he was deficient mentally, and decided that he was not a fit pupil for the school for the blind. He was then transferred to the Massachusetts School for Feeble-Minded, where he still remains. He cannot be taught much on account of his poor sight. He has to be classed with younger pupils, and is quite unpromising. As to any prenatal cause for his lack of capacity, the family physician has written to the effect that no cause is known, except that during the period of gestation George's mother lived with her husband's mother, the above mentioned deaf-mute, and was far from happily situated, as this lady was not agreeable company.

We have classed him as an *idiot savant*, though imbecile might be a truer term. The partial deprivation of sight will not, however, explain all his lack of capacity for education. Still, if idiocy implies prenatal causes, then he is an idiot.

All present will call to mind blind Tom, the pianist, as a case in point.

The Perkins Institute has had a negro youth, blind too, who was as wonderful at rapid numerical computations as Blind Tom was (or is) at reproducing musical compositions once heard.

In the "Lettsonmian Lectures," published in the *British Medical Journal* for Feb. 5th, 1887, Dr. J. Langdon Down says, in reference to "Idiots Savants:"

This name has been applied to children, who, while feeble-minded, exhibit special faculties which are capable of being cultivated to a very great extent. One youth was under my care who could build exquisite model ships from drawings, and carve with a great deal of skill, who yet could not understand a sentence, who had to have his food dissected for him, and who, when writing to his mother, copied verbatim a letter from "The Life of Captain Hedley Vicars," by Miss Marsh, although it had not the slightest appropriateness in word or sentiment.

Another has been under my care who can draw in crayons with marvelous skill and feeling, in whom, nevertheless, there was a comparative blank in all the higher faculties of mind. Extraordinary memory is often met with, associated with very great defect in reasoning power. A boy came under my observation who, having once read a book, could evermore remember it. He would recite all the answers in "Magnall's Questions" without an error, giving in detail the numbers in the astronomical division with the greatest accuracy. I discovered, however, that it was simply a process of *verbal adhesion*. I once gave him Gibbon's "Rise and Fall of the Roman Empire" to read. This he did; and on reading the third page he skipped a line, found out his mistake, and retraced his steps. Ever after, when reciting from memory the stately periods of Gibbon, he would, on coming to the third page, skip the line and go back and correct the error with as much regularity as if it had been a part of the regular text. Later on, his memory for recent reading became less tenacious, but his recollection of his earlier readings never failed him.

Another boy can tell the tune, words and number of nearly every hymn in "Hymns, Ancient and Modern." Often memory takes the form of remembering dates and past events. Several children under my observation have had this faculty to an extraordinary degree.

* * * * *

The faculty of number is usually slightly developed with feeble-minded children, while memory is fairly well developed; and yet I have had under my observation cases where the power of mental arithmetic existed to an astonishing extent. One boy about twelve years of age could multiply any three figures by three figures with perfect accuracy, and as quickly as I could write the six figures on paper; and yet so low mentally was he that, although having been for two and a half years in the almost daily habit of seeing me and talking to me, he could not tell my name.

Another boy, who has recently been under my observation, can multi-

ply two figures by two figures; while another could multiply two figures by two, and a short time since could multiply three figures by three, but since an epileptiform attack has lost this faculty to some extent. None of them can explain how they do it; I mean, by what mental process. It has appeared to me, however, when by rare chance they have made a mistake, and some hesitation has arisen, the plan has been to clear off the multiplication of the higher figures first.

Improvisation is an occasional faculty. I had a boy under my care who could take up a book, pretending to read (an art he had not acquired) and improvise stories of all kinds with a great deal of skill and in any variety to suit the supposed tastes of his auditors.

Memory of tune is a very common faculty among the feeble-minded; they readily acquire simple airs, and rarely forget them. I have had one boy under my observation who, if he went to an opera, would carry away a recollection of all the airs and would hum or sing them correctly.

In none of the cases of "Idiots Savants" have I been able to trace any history of a like faculty in the parents, or in the brothers or sisters, nor have I had any opportunity of making a necropsy, except in one instance. This was in the case of a boy who had a very unusual faculty, of which I have never since met another example, namely the perfect appreciation of past and present time. He was seventeen years of age, and although not understanding, so far as I could gather, the use of a clock-face, could tell the time to a minute at any part of the day and in any situation.

I tried him on numberless occasions, and he always answered with an amount of precision truly remarkable. Gradually his response became less ready, his health became enfeebled, and the faculty departed. At a necropsy I found that there was no difference in his cerebrum from an ordinary brain, except that he had two well marked and distinct soft commissures.

All these cases of "Idiots Savants" were males; I have never met with a female.

Dr. Wm. W. Ireland * (edition of 1877, page 280) says:

There is something in the nature of our conceptions of numbers, and the manner in which in arithmetical calculations we can shift from ideas to words, and from words back to ideas, which arrested the wonder of the first Greek philosophers.

Pythagoras speaks of numbers as if outward objects were copied from them. He says:

The wisest of all things is number, and next to number, that which gives names.

Æschylus makes Prometheus say that he discovered to men numbers, the chief of wise devices.

Dr. H. B. Wilber, formerly of the New York State

* On Idiocy and Imbecility.

Asylum for Idiots at Syracuse, says of a boy who understood numbers before he could count:

I have no explanation to offer for this mental operation, but it seems to me that *number was comprehended to the extent mentioned without language.*

These *idiots savants* are probably like Zerah Colburn and other "lightning calculators," except that in the former class their general deficiency makes the abnormally acute faculty stand out the more prominently. Dr. Ireland says:

The occurrence of special talents in idiots does not on the whole prove any more for the specialization of the faculties in the different parts of the brain, than the occurrence of special talents in sane individuals.

In mental pathology we believe it is generally admitted that in mental decay the higher, more lately developed faculties are lost first—first honor, then honesty, then the natural affections, and last of all, the vegetative functions. Now, if idiocy and imbecility are reversions to lower types, does not the persistence of the comprehension of number argue that the idea of number is an early planted one?

In the case of George, memory alone does not explain his answers, nor can Dr. Down's "verbal (numerical) adhesion" suffice to explain his culling the correct answer from the past ten years with constantly interrupted sequence of unequal months, leap-years and the awkward divisor the seven week-days make.

At home they depend on him as a record as to dates. When asked how he knows, he says he has calendars at home and his sister taught him. This does not seem possible, nor does his retentiveness in other branches justify the belief that it is mere memory alone. It is evident he has learned the days of the week and the number of days in each month in the way he claims, but beyond this it does not seem possible he answers from memory alone.

I am indebted to Dr. A. W. Wilmarth for some of the names of authorities on the subject. One, Dr. Grabbom, of Earlswood, who has a monograph on the subject, I have not been able to secure.

A STRANGE HOMICIDE CASE.*

By J. T. ESKRIDGE, M. D., Colorado Springs, Colo.

IN the study of mental phenomena disturbances of consciousness are often so recondite as to puzzle the most expert alienist and stagger the belief of the average non-professional mind. A person may be conscious of his actions and environments and incapable of spontaneity. There is entire loss of will-power, as witnessed in the hypnotic state. He may be partially conscious, commit acts of violence that he would not do in his right mind, and still have a confused memory of some of the more prominent things that occurred while he was in this condition. He may be more profoundly unconscious, act rationally or irrationally, and afterwards it will be found that he has no memory of his actions during this period.

The following homicide case is so interesting, especially from a medico-legal stand-point, that, I think, it will repay a careful study of all the circumstances connected with it.

Milner & Chapman, partners in the ranch business, engaged Higginson and Forbs to sink a well for them, promising to let them have their windlass for this purpose until they should need it. On April 1st, 1886, Milner said to Forbs, that he needed the windlass, and would call for it the next day. At the same time he told him that he would find another windlass for him as soon as possible. Forbs made no reply. Chapman came to Colorado Springs to get a windlass, and early the next morning, April 2, Milner and an elderly man, by the name of Hancock, went to the well and brought the windlass to Milner's cabin, some three miles distant. When Milner and Hancock drove up to the former's cabin they found

* Read before the Medical Jurisprudence Society of Philadelphia.

Higginson and Forbs there. Higginson said to Milner, "What are you going to do with the windlass?" The latter replied, that he was taking it to a place where he intended sinking another well.

After this, Milner, leaving his team standing by the door, went into his cabin, followed by Hancock. He had been in it only a few minutes, when he heard Higginson say to Forbs, "Get the reins and give them the whip!" On Milner's immediately going out of his cabin, he saw Higginson in the wagon, and Forbs, with the reins and whip in his hands, and one foot on the hub of the wheel, just about getting into the wagon, whilst the mules were in the act of starting. Milner rushed to the head of the team, stopped it, then went around where Forbs was standing, and demanded the reins and whip. The latter, who was a powerful man, and known as a fighting bully, raised the butt of the whip to strike, saying he would kill him (Milner), whereupon Milner turned to run, but in turning received the blow on the top of the head, and was felled to the ground. Forbs jumped on him and began to beat him with the whip and his fists over the back of the neck and shoulders. Hancock, who was in the house still, hearing the blows, hastened out, and seeing Forbs on Milner, pulled him off. The latter finding himself free, got up, looking pale and bewildered, and with one hand rubbing his eyes and head, slowly and unsteadily walked to his cabin, a distance of some twenty or thirty feet. He first passed the cabin door a few feet, but then turned, steadied himself against the cabin and entered it. At this juncture Higginson said, to Forbs, that Milner had gone for his gun, whereupon Forbs began to approach the cabin and get more in front of the door, so that he could see what Milner was doing. On reaching a position that admitted a view of the interior of the cabin, he suddenly threw up both hands and cried, "Don't shoot!" but almost simultaneously he fell, pierced through the heart with a cartridge from Milner's rifle.

Higginson hastened to the cabin, and found Milner pushing a cartridge along the rifle barrel, as if desirous of reloading, but his gun remained locked so that it was impossible for him to recharge it. Higginson caught hold of the gun and endeavored to wrest it from Milner, but the latter kept hold of it, and said, "Let me alone; I won't shoot you; I won't shoot anybody."

He consented to go from his own cabin to Mr. Mann's, a distance of some two or three hundred yards. Higginson and he, both holding the gun, walked this distance together. In going he had to pass almost directly beside the prostrate body of Forbs, who was still breathing, but Milner took no apparent notice of him, and said nothing on his way from his house to Mann's, although when about midway they met Mrs. Mann, and Higginson in reply to her question, "What is the matter?" said; "Ike (meaning Milner) has shot Bill" (meaning Forbs).

On reaching Mann's house, Milner relaxed his grasp of the gun and sat down, looking pale and bewildered, but saying nothing.

Milner was seen at Mann's by several persons, and their testimony in regard to what he said while there, is a little conflicting.

According to some, the first words that he said were, "I have killed a man with this gun! I killed him instantly, and I tell it before you." But the most reliable witness testified that the first and almost the only words that he spoke while at Mann's were, when some one told him that he had shot Forbs, "If I have killed a man, I don't know it."

When told he would be hung, he said he would go to Mr. Buzzard's place. He requested Hancock to go to his cabin and get some clothes for him, and then started for Buzzard's, a distance of some seventeen miles. He had traveled the path across the prairie several times before and was quite familiar with the route; but on that occasion he lost his way at midday. This was several miles from his own place, where he was found, by a man on

horseback, wandering over the prairie. After he was pointed out the way to Buzzard's, he reached his place without further trouble.

When asked on the witness stand why he lost his way, he said he didn't know, but felt strange; and, on being further questioned as to what particular way he felt strange, he said his head hurt him and he couldn't see well. When he reached Mr. Buzzard's, his expression was vacant, and he was observed to act strangely. He started for Colorado Springs next morning, to place himself under the protection of the law. He was met at the depot by the deputy sheriff, to whom he surrendered himself.

About one month before Milner's trial was to take place, Dr. Strickler, after giving me the circumstances of the killing, asked me if I thought a plea of unconsciousness from blows on the head could be successfully maintained for him. I replied that the provocation for the killing was so great, and Milner's actions so systematic and logical afterwards that I feared it would be impossible to make a jury believe he had taken the life of Forbs without knowing what he was doing. I found that the doctor had given considerable study to the case, and was pretty well convinced that Milner was partially or totally unconscious when he committed the homicide.

We both decided to examine Milner, and hear and sift the sworn testimony before making up our minds in regard to the matter. On Saturday previous to the beginning of the trial we were with Milner questioning him about half an hour.

He related the acts leading to the tragedy, in substance as given above, up to the moment that he was struck by the whip, after which, he said that he remembered absolutely nothing until he heard the report of the gun, of which he had only a faint memory. He said that he had no memory of having seen Forbs, either dead or living, after he had struck him with the whip. He remembers a scuffle over the gun, but does not know with whom it occurred and what he said. He also indistinctly remembers going from

his cabin to Mann's house in company with some one, each having hold of the gun, but has not the slightest idea who it was. He remembers being at Mann's house, but knows nothing of what was said or done there, except his telling Mrs. Mann that he was going to Buzzard's place. He says that he remembers telling Hancock to get his coat and hat out of his cabin. I asked him why he did not go and get his clothes? He said he didn't know. The first thing that he claims to have a distinct remembrance of was being overtaken by a person on horseback, while he was crossing the prairie on his way to Buzzard's. This man told him that he had killed Forbs, but was not to blame for it, and urged him to flee, for they would give him considerable trouble.

It was contended by Dr. Strickler and myself, who testified in behalf of the defence, that as all the witnesses, both for the prosecution and defence, were unanimous in their testimony that Milner had not the slightest warning of trouble until it was precipitated upon him whilst he stood defenceless in the presence of a great bully, enraged and threatening his life; that he had no time to think out a theory of defence based on disturbance of consciousness, which he acted from the time that the blow was given until some time after the shooting; secondly, that not one man in one hundred would be capable of judging of his acts, sustaining a psychological condition so obscure, and so very difficult to feign and carry out under circumstances so exciting; thirdly, that Milner, who is ignorant, almost idiotic in appearance, and foolish in some of his actions, would be the last to think of such a theory, and totally unable to measure his actions and words to accord with and sustain it.

Now, let us try to analyze and judge the significance of his appearance, words and actions, subsequent to the blow which felled him.

Nearly all the witnesses who saw Milner at the time of the shooting, those who saw him at Mann's house subsequently to it, and Mr. Buzzard, who did not see him

until several hours later, are unanimous in their statements to the effect, that his face was pale, his eyes staring, and as some expressed it, he looked like a man greatly frightened. Mr. Hancock, who pulled Forbs off Milner, says that he looked pale and strange; his eyes had a wild and queer appearance; that he walked slowly and unsteadily to his cabin; that one hand was carried several times to his eyes and head, which he rubbed as if in pain, and that when he reached the cabin door, he put out one hand and steadied himself against his house a few moments before entering.

How different is this behavior to that of one who is angered and seeking to revenge himself? We hear nothing of the steady and firm step, the contracted brow, the half-closed eye and determined look, so characteristic of one enraged and intent on revenge.

Besides, had he been seeking his gun in order to shoot Forbs, is it not most probable that he would have hastened as rapidly as possible, lest his enemy, out of whose grasp he had just been freed, should again attack him before he was able to defend himself. Again: We are told by the witnesses, that he went a round-about-way to his cabin. The main witness for the prosecution admitted that Milner first went past the door, and then turned back and entered his cabin. Having entered his cabin, the gun was lying loaded before him. It is a weapon of defence. He seized it. He did not rush out and shoot the man who had attacked him, but we may presume he stood in his cabin bewildered and frightened, and not till Forbs appeared in front of the door did he shoot.

In this connection it is well for us to remember that fright, as well as a blow on the head may craze the mind and paralyze the will.

Further: Most men, especially those on the Western plains, if attacked by a great bully with threats of intent to kill, would, if they had a weapon by them, defend themselves, even though it necessitated their taking life.

In this frame of mind Milner was knocked down, and

rendered, as the writer believes, partially or totally unconscious. Is it then not plausible that his actions, while in this bewildered state of mind, should be guided to a greater or less extent by the thoughts and purposes that predominated his mind immediately preceding the blow?

According to Foderé, a man in an unconscious condition simply carries out the purposes that he had formed during his consciousness and should be held chargeable for his actions; but the law makes provision, that if a man is in a condition of mind that he does not realize the nature of his acts and is unable to control them, he cannot be held responsible for them.

We have reason to believe that the first thing that a person remembers after an injury to the head that renders him unconscious is the last that occurred to his mind prior to the injury.

Conceding that Milner was partially conscious, and gradually regaining his senses when he reached his cabin and saw his gun, would not his first act in shooting be in accord with his first thoughts ushering in returning consciousness? If he had seized his gun and sought his victim, it would not have denoted a degree of consciousness incompatible with irresponsibility, for we know that cases of epileptic insanity carefully and diligently seek for victims and deliberately kill them.

Milner, after getting his gun, remained in his cabin, as we have seen, and it is possible, and even probable, that he was about shooting, without knowing where or why, without aim or purpose, except as his unconscious *ego* was impelled by an unconscious sense of danger. His great danger and his need of the means of self-defence had been most forcibly impressed upon his then conscious senses by means of the raised whip in the hand of his violent assailant, who, as he struck Milner, accompanied the blow with an expression of his intention to kill him. With the death threat ringing in his ears, he may have been in the act of shooting when Forbs appeared in front of the door and received the contents of the gun. This

view receives support from the fact that the cry of Forbs, "Don't shoot!" and the report of the gun, were almost simultaneous.

The witness for the prosecution testified, that when he reached the cabin, a few seconds after the shooting, that he found Milner with the rifle, and a cartridge which he was sliding along the barrel, as though he was trying to reload, but that the gun was adjusted for firing and not for being loaded. No one with his senses could expect to charge a breech-loading rifle in this way. His mental equilibrium must have been greatly disturbed, for we should expect a man living on the Western prairie and accustomed to his rifle, to recharge his gun after firing, although greatly abstracted or partially unconscious. He claims a faint memory of the report of the gun.

From what we know of certain states of partial or total unconsciousness, we should expect a sudden and loud noise, like the report of the discharge of a gun, to make some impression on one who is not entirely unconscious. Indeed, the fact that he did not deny hearing the report of the rifle, is, in the writer's opinion, strong evidence that he was not feigning unconsciousness. We know that persons who try to feign mental disturbance usually overdo it. In harmony with a layman's idea of such a mental disturbance as unconsciousness, if Milner had been feigning he would have forgotten everything. His calmness, his expression, "Let me have the gun; I won't shoot you; I won't shoot anybody;" his saying nothing about having shot Forbs; his failing to take any notice of him or mention his name, although he passed by him while he was still breathing; his not referring to the quarrel, or saying anything about the affair, are contrary to the actions and general behavior of one who, in an excited and enraged condition, has taken the life of one of his fellow-beings. A man under such circumstances either expresses great sorrow or tries to justify the violent act by a multitude of words, which indicate his anger and excited state of mind. Milner did neither.

He acted like a person just waking from a deep sleep, and does not realize his surroundings. His manner in going from his own to Mann's house, and his quietness and bewildered appearance while there, all indicate the same dazed condition. After he had been sitting in Mann's house sometime without saying a word, Mrs. Mann said to him, "You have killed a man, and will be hung for it." He replied, "If I have killed a man I don't know it." This was the first expression on his part, claiming unconsciousness of his previous acts, yet we have seen that his behavior, from the moment that he had been felled with the whip, support this statement. This condition, to have been feigned from the start, would necessitate a premeditated murder, which we have seen was impossible under the circumstances, and require, on his part, a profounder knowledge of psychology than most physicians possess, a self-possession, a training and an acuteness of intellect such as but few men have. While at Mann's house he seemed to realize, for the first time, what he had done, and naturally he decided to go to the house of his friend and relative, Mr. Buzzard's. Yet his losing his way at mid-day, along a path with which he was familiar and over which he had frequently traveled, shows that not even then was he himself.

On the witness stand he was asked why he lost his way. He said that he didn't know, he "felt strange." When questioned further as to what particular way he felt strange, he replied that his head hurt him, and he could not see well. Now, what did this poor ignorant youth know of the import of such a statement? He did not know that blurred and confused vision is liable to follow a blow on the head sufficiently violent to bewilder one. What gives this statement of his greater value is, that it was not made voluntarily by him, but was only wrung out of him after a prolonged examination, while he was on the witness stand.

Judge Harrison's instructions to the jury, relating to the mental condition of a person committing an act

contrary to law, are so liberal and so in advance of what many judges seem content to give, that they are worthy of a wide circulation, and I will insert them here:

There is no criminal act, when the actor at the time of the commission of the alleged offence is in a state of unconsciousness or morbid disturbance of the mind, through which the free deliberation of the will is excluded.

The law recognizes that a person suffering from disease of, or injuries to, the brain, may do apparently rational acts, and yet be in such mental condition as to be unconscious, either wholly or partially, of the true nature and consequences of his conduct. And under such circumstances, the person so affected would not be criminally responsible, if such peculiar mental condition precluded the power of forming or originating an evil or criminal intent.

The defendant in this case is presumed by law, to be innocent of any crime whatever, until his guilt is first established by the evidence in the case, beyond every reasonable doubt. And, if after a careful consideration of all the evidence, there exists, in the minds of the jury, a reasonable doubt as to whether at the time of discharging the fatal shot which killed deceased, the defendant was then and there unconscious, either wholly or partially, to the extent that he was not then and there able to understand and realize the true character and consequences of the act he was committing, then, and in such case, the defendant is entitled to the benefit of the doubt, and must be acquitted, even though the killing of the deceased was not at the time necessary for the purpose of self-preservation upon the part of the defendant.

The mere fact that the defendant killed the deceased does not, of itself, render him guilty of any grade of felonious homicide whatever. For, in addition, the killing must have been committed by the defendant while in a state of sound mind and understanding, and under such circumstances as to constitute an unlawful homicide, as explained in these instructions.

After the jury had been out a few hours, a verdict, "Not guilty" was agreed upon.

I know of no case exactly similar to the one I have related at some length, in which the plea of unconsciousness, from a blow on the head, has been successfully maintained for the defendant in any criminal suit.

Let us inquire into the disturbances of consciousness found in epileptics, somnambulists and hypnotized persons, and disturbed consciousness, from blows on the head, fright, etc.

One of the most noted cases of amnesia is the one

reported by Mesnet, in 1874, and quoted by Maudsley, Tuke and several other writers:

A sergeant in the French army, at the age of twenty-seven years, was wounded by a bullet which fractured the left parietal bone. He was unconscious for three weeks, and at the end of this time right hemiplegia was complete. In the course of a year only slight feebleness of the right side remained.

About three months after the receipt of the injury peculiar brain disturbances began, lasting fifteen or thirty hours, and occurring afterwards periodically at intervals of every twenty or thirty days.

When the case was reported, it had been four years since the psychic manifestations first showed themselves. During the normal intervals he was bright and intelligent, and performed satisfactorily the duties of a hospital attendant. The transition to the abnormal state was instantaneous, but preceded, as a rule, by some uneasiness or heaviness about the forehead, which he compared to the pressure of an iron band. There were no convulsions, nor did he utter any sound.

He becomes suddenly unconscious of his surroundings and acts like an automaton. His eyes are wide open, the pupils dilated, the forehead is contracted, there is an incessant and a chewing motion of the jaws. In a place to which he is accustomed, he walks about freely as usual, but if he be put in a place unknown to him, or if an obstacle is put in his way, barring his passage, he stumbles gently against it, stops, feels it with his hand, and then passes on one side of it.

He offers no resistance to being turned this way or that, but continues his walk in the way in which he is directed. He eats, drinks, smokes, walks, dresses and undresses himself, and goes to bed at his usual hours. He eats voraciously, and without discernment, scarcely chewing his food at all, and devours all that is set before him without showing satiety.

General sensibility is lost; pins may be run into his body, or strong electric shocks sent through it, without his evincing the least pain. The hearing is completely lost; noises made close to his ears do not affect him. The senses of taste and smell are lost; he drinks indifferently water, wine, vinegar, assafoetida, and perceives neither good nor bad odors. The sense of sight is almost, but not quite, lost; on some occasions he appears to be in some degree sensible to brilliant objects, but he is obliged to call the sense of touch to his aid in order to apprehend their nature, form and position; they produce only vague visual impressions, which require interpretations into the language of touch. The sense of touch alone persists in its integrity; it seems, indeed, to be more acute than normal, and to serve almost exclusively, to maintain his relations with the external world.

When he comes out of the attack, he has no remembrance whatever of what has happened during it, and expresses the greatest surprise when told what he had done.

Through the tactile sense trains of ideas may be aroused in his mind, which he immediately carries into action. On one occasion, when walking in the garden under some trees, he dropped his cane, which was

picked up and put into his hand. He felt it, passing his hand several times over the curved handle, became attentive, seemed to listen, and suddenly cried out "Henri!" and a little while afterwards, "There they are, at least twenty of them; we shall get the better of them!" He then put his hand behind his back, as if to get a carriage, went through the movements of loading his musket, threw himself at full length upon the grass, and concealing his head behind a tree, after the manner of a sharpshooter, followed, with his cane to his shoulder, all the movements of the enemy whom he seemed to see. This performance, provoked in the same way, was repeated on several occasions. It was probably the reproduction of an incident in the campaign in which he was wounded. I have found that the scene is reproduced when the patient is placed in the same conditions. It has thus been possible for me to direct the activity of my patient in accordance with a train of ideas which I could call up by playing upon his tactile sensibility at a time when none of his other senses afforded me any communication with him.

All the actions of the sergeant, when in his abnormal state, are either repetitions of what he does every day, or they are excited by the impressions which objects make upon his tactile sense. Arriving once at the end of a corridor where there was a locked door, he passed his hands over the door, found the handle, took hold of it and tried to open the door. Failing in this, he searched for the keyhole, but there was no key there; thereupon he passed his fingers over the screws of the lock, and endeavored to turn them, with the evident purpose of removing the lock. Just as he was about to turn away from the door, Dr. Mesnet held up before his eyes a bunch of seven or eight keys. He did not see them. They were jingled loudly close to his ears, but he took no notice of them. They were then put into his hand, when he immediately took hold of them, and tried one key after another in the keyhole without finding one that would fit it.

Leaving the place, he went into one of the wards, taking on his way various articles, with which he filled his pockets, and at length came to a little table which was used for making the records of the ward. He passed his hands over the table, but there was nothing on it. However, he touched the handle of a drawer, which he opened, taking out of it a pen, several sheets of paper and an inkstand. The pen had plainly suggested the idea of writing, for he sat down, dipped it in ink and began to write a letter, in which he recommended himself to his commanding officer for the military medal on account of his good conduct and his bravery. There were many mistakes in the letter, but they were exactly the same mistakes in expression and orthography as he was in the habit of making when in his normal state. From the ease with which he traced the letters and followed the lines of the paper, it was evident that his sense of sight was in action; but this was placed beyond all doubt by the interposition of a thick screen between his eyes and his hand. He continued to write a few words in a confused and almost illegible manner, and then stopped, without manifesting any impatience or discontent. When the screen was withdrawn he finished the uncompleted line and began another.

Another experiment was made: Water was substituted for the ink.

When he found that no letters were visible, he stopped, tried the tip of his pen, rubbed it on his coat sleeve, then began again to write, with the same results. On one occasion he had taken several sheets of paper to write upon, and while he was writing on the topmost sheet it was withdrawn quickly. He continued to write upon the second as if nothing had happened, completing his sentence without interruption and without any other expression than a slight movement of surprise. When he had written ten words on the second sheet, it was removed as rapidly as the first; he finished on the third sheet the line which he had begun on the second, continuing from the exact point where his pen was when the sheet was removed. The same thing was repeated with the third and fourth sheets, and he finished his letter at last on the fifth sheet, which contained his signature only. He then turned his eyes toward the top of this sheet, and seemed to read from the top what he had written, a movement of the lips accompanying each word. Moreover, he made several corrections on the blank page, putting here a comma, there an *e*, and at another place a *t*; and each of these corrections corresponded with the position of the words that required correction on the sheets which had been withdrawn.

Dr. Mesnet performed several other interesting experiments with the sergeant, but I have quoted sufficiently to show the unconscious nature of all his acts during his abnormal condition. In every amnesiac paroxysm the sergeant became a veritable kleptomaniac. Stealing was the only thing that he did at these times that he was not accustomed to do in his normal condition ("Physiology of the Mind," Maudsley.)

Cases of double consciousness, or periodic amnesia, leading to confusion of surroundings and personality, associated with epilepsy, are quite common. Spitzka mentions the case of a policeman who patrolled the wrong beat during one of these periods of unconsciousness, his actions not being sufficiently strange to attract the attention of the citizens. Dr. Hammond relates the case of a man subject to epilepsy, in whom the amnesiac condition lasted on one occasion eight days. During this time he remained away from home, attended theaters and traveled long distances. On regaining consciousness he remembered nothing of what he had done during the amnesiac condition.

Dr. Mills, in a recent clinical lecture, gives the histories of three cases of epilepsy, following injuries to the brain,

in which occurred periods, lasting from a few minutes to several days, of disturbed consciousness and more or less complete amnesia. One man traveled several hundred miles in a direction he had not intended going, only coming to himself in a strange city a long distance from home.

Numerous cases of homicide have been committed by epileptics in apparently unconscious conditions. One in this condition does not always take life by accident, but he may plan and deliberate upon killing some one. Clouston relates the case of an epileptic patient who planned to kill his physician with whom he was on the best of terms. On coming out of his unconscious state and learning what he had done and planned to do, he was greatly surprised, as he remembered nothing that occurred during his abnormal condition. In the April number of the *ALIENIST AND NEUROLOGIST*, for 1886, Dr. Kiernan gives an account of a successful plot, by four insane persons, two of them epileptics, to attack the attendant and escape from confinement.

Dr. Tucker, of Colorado Springs, tells me that he was thrown from his horse a few years ago. He remembers rising to his feet, and seeing his horse gallop off and people running toward him, some of whom he recognized. The next thing that he remembers was being in his office. He has no personal knowledge as to how he reached his office, but was afterwards informed that he walked there, a distance of several blocks. In this case there was a short period of bewilderment, with a vague memory of what took place, followed by an interval, of some length, of complete amnesia. Dr. Tucker has given me an account of another case, of which he was cognizant, somewhat similar to his own personal experience, except in the tragical homicide which resulted from it. A gentleman was thrown from his horse, which he remounted and rode some distance after the fall, when on meeting a man whom he had never seen before, he drew his revolver and shot him, causing almost instant death. The last thing that

was remembered by this man was being thrown from his horse. He did not know how long he remained on the ground; how he managed to get on his horse, or how far he had ridden after the fall before he shot the stranger. If the unfortunate man, who was shot, had happened to be on unpleasant terms with the unconscious individual before, or at the time of the shooting, it would have been difficult to convince a jury that the killing was accidental.

Somnambulism.—Tuke says:

Somnambulism is, not without reason, classed under the neuroses, and in its severest form it approaches perilously near nocturnal epilepsy. He further states, that the opinion held by Trousseau, that "every nocturnal accident ought to make one think of epilepsy" has only too much truth in it.

Lord Culpepper's brother, famous as a sleep-walker, was indicted at the Old Bailey, in 1686, for shooting one of the Guards and his horse. The defence set up was somnambulism, and he was acquitted, after his counsel had called in his favor nearly fifty witnesses to bear testimony to the marvelous exploits he performed during sleep. Quoted by Tuke, from McNish's "Philosophy of Sleep."

Foderé tells the story of the monk, who entered the prior's bed-room during the night, with his eyes open, but fixed, and with a large knife in his hand. With scowling features and determined mien, he proceeded straight to his superior's bed, to which the prior fortunately had not yet retired, and inflicted three stabs, which penetrated the bed clothes and a mat which served the purpose of a mattress. He then returned to his room with smiling and relaxed features. The next day, when questioned by the prior, he confessed that he had dreamt that his mother had been murdered by the prior, and that her spirit had appeared to him, crying for vengeance. Transported with fury at the sight, he seized the knife, and ran directly to the supposed assassin, in order to stab him. Shortly after he returned to his bed he awoke, covered with perspiration, rejoiced to find it was only a dream.

This narrative rests on the authority of Foderé, who heard it from the prior himself, Don Duhaget, who was sitting in his room when the monk entered and proceeded to his bed, in a state of somnambulism (Tuke's "Sleep-Walking and Hypnotism.")

Fright.—I fancy that we often overlook the fact that fright, especially when one is suddenly awakened from sleep, is capable of dethroning reason. An interesting case was reported to me some time ago by a friend, who was somewhat familiar with the circumstances: A gentleman was suddenly aroused one night from deep sleep by the cry "The house is on fire!" On waking he saw the house hopelessly in flames. He rushed to a bed, snatched up his youngest child and threw it violently on the floor, and killed it instantly. The next day the father was a raving maniac.

Dr. Adams, former surgeon to the Massachusetts General Hospital, Boston, but now residing at Colorado Springs, informs me that a trusty and intelligent housekeeper, in one of his families, presented a few years ago, total amnesia for her own actions, and even for the fire, during the burning one night of her employer's barn. She was suddenly wakened by the alarm of fire; and, as it was feared the dwelling would be burned also, she industriously collected all the valuables of the house preparatory to removing them. The flames were extinguished before the dwelling took fire, and the family retired to bed again and slept unmolested till the morning. When the housekeeper awoke and saw the barn burned, she expressed great surprise. It was found on inquiry she remembered nothing of the occurrence of the previous night.

Because, in the recent trial of the Milner homicide case, the brilliant lawyer, for the defence, forced one of his medical witnesses to say that the disturbance of consciousness, produced by a blow on the head, is the same as that found in a person in the hypnotic state, and because of a sarcastic editorial in the *Denver Republican*, subsequent to the trial, entitled "Hypnotism by a Club,"

I will endeavor to contrast, medico-legally, the unconsciousness, or the amnesiac state, of epilepsy, somnambulism and cephalic traumatism, with the mental condition found in hypnotism. It may be done in a few words. I do not wish to be understood as claiming that the hypnotic state has not much in common with the condition known as somnambulism, the amnesiac period of certain epileptics, and even with the perverted consciousness, produced by a blow on the head; yet in medical jurisprudence, the inability of one in the hypnotic state to act spontaneously, it seems to me, will forever separate it from the other mental conditions, in which we find individuals planning, willing and acting by reason of the morbid state they are in, and not from the influence of another person, in obedience to whose will he is subject, as is the case with one who is hypnotized.

DISCUSSION.

DR. CHARLES K. MILLS, said: The subject is an interesting one, and the case, I think, is also of considerable interest. The particular interest, it seems to me, about the case is from the fact that the defence was with reference to an acute condition, produced by an injury upon or near the spot where the homicide was committed.

I know of very few cases exactly similar to this of Dr. Eskridge's, but in a public lecture delivered by me, and since published, I referred to a case very similar to this, even in some minute details. A man near this city having had some altercation with the driver of a carriage, returned to the livery stable, where the altercation continued, and he was struck on the head with the butt end of a whip, and very severely injured. As subsequent events showed, he then claimed, or claims now, that he knew nothing of what occurred afterwards, until, if I remember right, many hours elapsed; but it was testified that shortly after he was struck with the whip he passed out of the stable, raging wildly, and a little later he was seen on the street; he went into a store and purchased a pistol, and, after some adventures on the street, came back and threatened to use it, but was seized and afterwards taken home. He fell into a state of unconsciousness, with delirium, and remained sick in bed for a considerable time. When I saw him, he had become partially deaf in one ear, heard roaring noises, and was subject to attacks of vertigo. A double suit was threatened in this case; he was about to enter suit against the individual who struck him for damages; and a counter suit for assault and battery with intent to kill was contemplated.

Whether the case referred to in the paper is one in which the hypothesis of unconsciousness is valid, I scarcely know. I think it entirely possible, at least, that the man might not have been in a condition of unconsciousness in the strict sense. The paper is somewhat confusing in the way the term "unconsciousness" is used. I think it would be better in a case of this kind if different or qualifying terms were employed. There are several conditions of unconsciousness, and a proper appreciation of a subject of this kind must depend largely upon a true scientific conception of the character and degree of consciousness or unconsciousness.

You can have, and do have, varying conditions of consciousness. It is beyond peradventure that individuals suffering from certain diseases can have varied conditions of consciousness. They can have the ordinary states of consciousness or unconsciousness; they also have a confused perverted consciousness, in which there is a fluctuating, perhaps, between a higher and lower consciousness. That is the condition in which I think this man was in.

They can, moreover, be in condition which is well known, and has been much studied—a condition which, psychologically, is one in which the higher cerebral centers are in abeyance, but in which the spinal and lower automatic brain centers are acting more or less perfectly. In other words, the individual can, through his eyes, ears, sense of touch, etc., recognize objects automatically so as to form opinions in accordance with his environment, but he is unable to transform these recognitions into true higher perception and consciousness. Of this very interesting, more or less perfect *automatic* consciousness, this case would not seem to be a good illustration; but I think it was a very fair, and probably a just defence to hold that this man, from the very severe injuries he received, was in a condition in which he was not wholly responsible for what he did, because of a perverted and confused consciousness.

There are some peculiar isolated points in this paper which are interesting, although all the authorities cited do not bear upon the case. Firing off the gun, the noise of the explosion, supposing him to have been bewildered, may have brought him to a clearer sense of his surroundings. In cases of insanity without any reference to injury, you sometimes have conditions similar to those shown in this man's case.

HON. WM. N. ASHMAN: Do you regard the defence of unconsciousness as a valid one, where a person is sufficiently rational to go and purchase a pistol, which he is afterwards ready to use effectively?

DR. MILLS: It is possible that it may be. The cases are very numerous in which individuals perform acts which appear perfectly rational in some states of perverted consciousness. You can only judge of such acts by what precedes and what follows; but it is far from being that positive evidence which a medical man would require. I see frequently in the wards at Blockley cases of this kind, or approaching it. I think, however, in this case, the man was in a condition of bewildered consciousness.

DR. LUDLOW: The doctor does not seem to take anger into

consideration. We all have that passion; and if I was to go out and get a pistol and come back and shoot a man, still it is anger. It is not unconsciousness or semi-consciousness—it is positive anger.

DR. CHAS. K. MILLS: We know that a man in anger will do almost anything; but I do not think that anger will produce a condition exactly such as was described in this case, supposing, of course, that Dr. Eskridge's presumptions in reference to the man are exact. In epileptics, many of whom have had injuries to the head, anger or passions of various kinds will sometimes precipitate conditions of unconsciousness or excitement. I think too that it is a much better, clearer thing, to have some sort of a definite idea about persons in these peculiar conditions of unconsciousness. I do not think it helps at all to say that there are not varying conditions of consciousness, that consciousness is one thing and unconsciousness another. The true way of studying matters of this kind is by the inductive method; with cases before us, we should search for the best explanations. I do think, with all deference, that there is something that can be best explained by the use of such words as "automatism."

DR. LUDLOW: I should say that anger precedes everything. I have seen cases where men were tremendously violent, and things going to be knocked to pieces, and a wife or daughter would come in and pat them a little on the shoulder, which seemed to have a sort of magnetism about it, and they would become calm and perhaps begin reading.

E. P. BLISS, Esq.: I would like to know whether very deep anger might not exist with bewilderment, like that in the case mentioned?

P. H. COGGINS, Esq.: The case this evening would seem to be distinct from one of mere anger from the points made by the paper. The manner of seeking the weapon and the manner of passing his cabin deliberately and coming back—all of his actions went to show that he was not acting under an angry impulse.

DR. LUDLOW: The gentleman referred to injuries to the head. There is nothing in the world which will make a man more angry and excite all the passions, than to strike him over the head. I remember the only fight I ever had with the school teacher was when he struck me over the head with a slate, and if I could have caught him, I would have killed him, if I was big enough.

DR. PANCOAST: What is the distinction between consciousness and automatic consciousness?

DR. MILLS: A true, complete consciousness—a consciousness that you and I have—is dependent on the working of the highest levels of the nervous system. Somnambulism illustrates one form of automatic consciousness. It is remarkable, if you study the cases closely, how frequently injuries to the head are the causes of disorders of consciousness.

E. P. BLISS, Esq.: The question is, Might not an injury to the head produce the same automatic consciousness; would not anger have the same effect mentally as an injury to the head? In the one case the partial unconsciousness would be a good defence at law, and in the other case it would not.

DR. PANCOAST: I think Dr. Mills is right. It is a question we will have to study well.

I was going to ask whether there are any murders on record where the crime was committed by somnambulists.

JUDGE ASHMAN: I do not recall any. I think there are some English cases.

R. J. WILLIAMS, Esq.: I am not at all familiar with any cases of that character. I do not think there have been any in our own State.

DR. PANCOAST: When I went to school, there was an epidemic, for mesmerizing, and I think I mesmerized the teacher, and almost got into trouble. We made one young man go through a complete tragedy and made him finally fight a duel.

I was much interested in the case of the prior related in the paper. If the prior had been in bed he would undoubtedly have been killed, but I do not think the offender would have been guilty of murder.

A gentleman from New York, one of the elder scholars, was very much interested in mesmerism, and he brought with him a small, plain piece of metal, bright, white and shining, about a quarter of an inch thick. He obtained it from a clairvoyant. It was simply placed in the hand in a dark room, and the victim made to look at it steadily for a certain length of time, and then the person who was performing the act would make a few passes through the air with his hands, and it was performed.

DR. JAMES HENDRIE LLOYD: This is often an exceedingly obscure subject, and is rendered more so sometimes by the use of ambiguous terms, such as double consciousness, automatism, etc. All thought appears to me to be a reflex action from sensation and perception, and in that sense it is automatic. The pathological state which is known as "automatism" is one in which the perception and memory is partially obscured for a time, and the man is acting within an exceedingly limited sphere, responding to a very few and restricted ideas, as in somnambulism and hypnotism. In some of these conditions the mind is confused and does not treasure up its impressions, and consequently after a certain period does not remember. This is true in varying degrees also in stupefaction, delirium and intoxication. The terms "double consciousness," "multiplex personality" and "double identity," are paradoxical. There can be but one identity in the mind, but it may be obscured, confused or even lost.

PASCHAL H. COGGINS, Esq.: Several seem to think this might be a case of mere anger. It seems to me that a few lines of this description would negative that idea. Just imagine this man as he is described: "The latter, finding himself free, got up, looking pale and bewildered, with one hand rubbing his eyes and head, slowly and unsteadily walked to his cabin, a distance of twenty or thirty feet. He first passed the door a few feet, and then turned, steadied himself against the cabin and entered." We can imagine that man. It is simply impossible that he could have been acting under such paroxysm of rage; it must have been something else than mere anger.

R. J. WILLIAMS, ESQ.: I will give you my view of what I thought of that man. He had an intention to inflict some injury on that man, and he tried to carry it out, but was too dazed. He had in his mind the idea that there was a gun some place, with which he could do some damage to the man who had assaulted him. That is the view I would take of it. It would be for the jury to say whether that was his intention or not. I think he intended to retaliate, but, probably did not have his full consciousness to such an extent that he could go direct.

DR. LUDLOW: Now that man, being whipped by a big bully, and seeing him standing before the door of his cabin, he grabbed the gun, and when he did grab the gun, he did it for fear the man was going to renew the attack, and he used the gun not to retaliate, but to defend. I believe the man had a certain amount of consciousness.

It is a most singular thing in regard to the working of the mind. That shows how much we have to learn in regard to this subject. We know that our profession has suffered very much from the opinions which have been given in courts of justice on the subject of homicides, etc.; and we know that from criminals who have laughed at how they humbugged the doctors into saying they were insane. One fellow, that my brother, the judge, sentenced to be hanged, confessed that he had stabbed forty-eight people, and yet the doctors had pronounced him an insane man. I do not mention this as a reflection at all. It only goes to show that we do not know a great many of these things.

R. J. WILLIAMS, ESQ.: I would like to ask the doctors' views of the case where a man came from Hartford, and carried on business in Norristown two or three months, but did not know anything about it.

S. SPENCER CHAPMAN, ESQ.: This man had been carrying on business and had some correspondence, had shown the usual business instincts, had been successful, and saved money. He suddenly fell, took a relapse, and when he recovered was surprised to find himself in Norristown, and not in Hartford, where he really lived.

DR. PANCOAST: There are some very remarkable cases, in one of which a servant girl in the house of a German professor would be attending to the housework and dusting the library while the professor was studying. One day she was taken very sick, and during her illness, to the astonishment of everyone, she talked most learnedly in Greek, Latin and Arabic, and it was to the astonishment of the whole community and the learned men of the university, who were witnesses of the fact. When she got better she was just the same ignorant girl as she was before, and it was a long time before it was explained. Finally, they came to discussing the question, and they found that she was in the habit of dusting the library, while he was reading aloud in his work pages of Arabic, Greek and Latin and these sounds entered into the ear and entered her brain, and were stored away in her brain cells. It is a remarkable illustration of the varied actions of the brain.

S. SPENCER CHAPMAN: If it were a thing which would attract the attention of the person hearing it, it would be a different matter; but the

facts show that she was an ignorant girl, and not likely to be attracted by what the professor was reading.

DR. ESKRIDGE, who was compelled to leave Philadelphia for Colorado before his paper was read, and to whom the discussion was sent, in his remarks, said: He was gratified that the subject of the paper had elicited an expression of opinion from so many members of the Medical Jurisprudence Society. He had purposely refrained from using any definite qualifying term to denote Milner's mental condition at the time of his firing the fatal shot, because the subject is a knotty one, and he hoped to have light thrown upon it by some of the distinguished members of the Society, for whose opinion he entertains a profound respect. In one portion of the paper he had referred to the mental condition of Milner, calling it perverted consciousness, in another partial consciousness, in a third unconsciousness, partial or complete, and again, dazed. He regretted that so few obscure cases of the kind had been carefully studied and published. He wished to express his thanks to Dr. Strickler, of Colorado Springs, for the privilege of studying the one that formed the subject of his paper. He agreed with Dr. C. K. Mills in believing that perverted or confused consciousness would most nearly express Milner's mental condition at the time of the homicide. He, however, could not agree with him in recognizing a condition of automatic consciousness. Dr. Eskridge said, when our actions are purely automatic they cease to be influenced by our will, and become little more than reflex in their nature. We may be conscious and at the same time perform automatic actions, but of these acts we are, at the time they are performed, entirely unconscious. We see this illustrated by persons, lost in reverie or profound thought, doing things contrary to what they had intended to do (Ideal or Reflective Consciousness of Bastian). When we are conscious of our every act, each act is influenced by our will and controlled by it. Were we to recognize automatic consciousness, we would have to attribute consciousness to certain plants, and to the headless frog. It seemed to him that it would be just as unphilosophical to speak of automatic consciousness as it is to accept the term "unconscious sensations."

Dr. Eskridge said he had not intended that all the cases he had cited in his paper should bear directly on the case which formed the subject of the paper. He had endeavored to compare the confused mental condition caused by a blow on the head with the mental states of somnambulists, and some epileptics, and with amnesia, known to follow some cases of fright. He had also briefly contrasted these mental aberrations with the mind in hypnotized persons. Every case that he had referred to in his paper had a special bearing on one or another of the mental states just mentioned.

Dr. Eskridge thought that Mr. Coggins' brief summary of Milner's actions immediately preceding the shooting sufficiently answered the objections raised by Dr. Ludlow.

He felt that the suggestion, "Whether very deep anger might not cause bewilderment," raised by Mr. Bliss, is an important one. In a case in which, both intense anger and a severe blow on the head may be acting to produce a condition of perverted consciousness, which the person's

deportment fully substantiates, it would be difficult to say which had the greater influence in disordering the mind, except, perhaps, we ought to expect mental disturbance caused by anger to have shorter duration than when it is caused by a blow on the head. An ungovernable temper is an evidence of an illy balanced mind, and one so afflicted is on the border-line of insanity. He said that he was far from advocating anger as an excuse for one man to take the life of another, but that he thought it a wise provision of the law that he who, whilst under the influence of anger, takes the life of a human being, is exempt from the crime of murder, and can only be punished for that of homicide. Milner, for some time after having been felled by Forbs, showed unmistakable signs of disordered consciousness, extending up to the shooting, and following it. In his case anger as well as the blow on the head, might have had something to do with disturbing his consciousness, but as the blow on the head was sufficient cause alone, and as his mental aberration did not entirely disappear until several hours afterwards, he thought the jury were justified in giving him (Milner) the benefit of the doubt, and rendering a verdict "Not guilty."

Dr. Eskridge thought that Dr. Lloyd was a little too sweeping in his statement, "The terms 'double consciousness,' 'multiplex personality,' and 'double identity,' are paradoxical." Certainly with us, in our normal condition, when awake, there is but one personality, a single identity, and the two hemispheres of the brain, if they act in thought at the same time, do so in harmony with each other. In disease may it not be different? It has never been proved beyond doubt that each hemisphere carries on, at the same time, its train of thought, the one conflicting with the other, but evidence is not wanting, pointing to the probability of such a condition.

Undue Influence in its Relations to Medical Jurisprudence.*

By AMOS G. HULL, of the New York Bar.

IF it had been determined that a paper should be read on the most nebulous subject within the realm of Medical Jurisprudence, perhaps none could have been selected more obscure and undefined, than the one on which I am about to speak. Undue influence in its medical and legal relations is my theme. This topic has been rendered cloudy by the manner in which the subject has been treated by lawyers and judges, and doctors and authors. It has not been relieved from the clouds of obscurity which surround it, by the learning and research of the Judiciary of two continents. There has seemed to be a hesitancy on the part of the bar to give it any settled or uniform definition. That hesitancy has seemed to grow out of the difficulty of finding cases on this subject with uniform characteristics. It is the absence, or imperfection, of correct definitions which tends to trip the feet of students and philosophers all along their journey through life while in search for truth.

Whoever shall give a perfect definition to Medicine, or Law, to Science, or its attributes, or to Nature, that Omnipresent power that surrounds us all, will be wiser than any being that has yet been born. Very few of the elementary writers have attempted to define this subject. There are many difficulties that will confront anyone who attempts to give it a satisfactory definition. The judges who have had occasion to adjudicate upon it, generally have discussed the facts in each case as they arose, and when finding the subject-matter tainted with undue influence,

* Condensed from American Medical Association Proceedings.

have pronounced judgment against it, on the ground of fraud and undue influence. Such a judgment is a misnomer; it is an incorrect use of terms. It is as absurd to say that an instrument is void for fraud and undue influence, as it would be to say that it is void by reason of a *fraudulent fraud*. Undue influence has its origin in fraud. It is in and of itself a fraud. But this infirmity of man, wherein fraud is born, with which courts of justice have so much to do, has in its ramifications an extensive nomenclature. It frequently amounts to crime, and is punished as such under different names. Fraud has been defined by writers of great authority and antiquity to be: any cunning, deception, or artifice used to circumvent, cheat, or deceive another. Such are called actual frauds. "But this definition," says Judge Story, "can hardly be said to include that large class of implied or constructive frauds which are within the remedial jurisdiction of courts of equity."

Fraud, in the sense of a court of equity, properly includes all acts, omissions and concealments, which involve a breach of legal and equitable duty, trust, or confidence justly reposed, and are injurious to another, or by which an undue and unconscientious advantage is taken of another. All writers admit the difficulty of giving it a definition. The student will find an interesting discussion of the different species of fraud in the opinion of Lord Hardwicke, in the case of *Chesterfield vs. Janssen*, 2 Vesey, 125.

Courts have to deal with a variety of frauds, actual frauds, positive frauds, frauds in fact, and constructive frauds; false promises, lies, circumventions, threats, duress, deceits and undue influence. They are assigned for punishment or correction by the wisdom of our fathers and by common consent, according to the degree of their wickedness or the web of their complications, to different tribunals, to criminal courts of law, courts of equity and probate courts. But, lamentable to be said, there is an infinite number of lies, false promises, deceits, frauds and

circumventions, for which no human tribunal affords any redress.

The purest girl, or it may be, the noblest young man, may, by the most artful deceits or blistering lies, covering even a character of infamy, be induced to make the most solemn contract on earth—the contract of marriage; and yet courts give no redress. If all false promises and deceits should be made the subject of judicial investigation, the world itself would not contain all the books which might be written. Science and civilization, in their march toward empire, have built that beautiful structure of jurisprudence, dual in its form, to one of which we give the name of common law; to the other, equity. Experience has drawn the line beyond which neither is expected to go. There are falsehoods, lies, deceits, backbitings, scandals, oppressions and wrongs that no man can number, which courts cannot attempt to redress or correct. Such are remitted for correction to the forum of conscience, the influence of society, or the scorn of men.

But we have on this occasion more particularly to deal with undue influence. He who criticises the definitions of others is in duty bound to give one himself. Hence, I have the boldness to offer a definition. *Undue influence*, as affecting contracts or wills, may be defined to consist of that *fraudulent persuasion*, or *oppressive and irresistible importunity*, or *adroit deceit* imposed upon a *mind impaired by disease or infirmity*, which induces the making of a *testamentary instrument* or a *contract* which would not have been made had the *mind been free* and in its *normal condition*.

He, who would have the temerity to attempt to exhaust this theme, must enter upon a field as boundless as the domain of man's cunning and ingenuity, and must explore depths as profound as the fathomless abyss of human depravity.

From the definition I have given, it will be perceived that the persuasion necessary to amount to undue influence must be fraudulent. Because reasonable persuasion, even

great importunity has been held to be permissible, when honestly made, to change a will when the decedent was of sound mind and memory. Then again the importunity must be *irresistible*, that is to say, the mind of the testator must be so weakened by disease or by senile dementia, or the infirmities of age, or so over-powered by some terror or external force, as to submit his will to the dominion and control of another. But it may be asked, "Cannot the wills of persons in perfect health and of sound mind be set aside?" Certainly; but not for *undue influence*. Suppose a person is called upon to draw a will or a codicil, and it is read to the testator, and approved, and then taken away to be engrossed, and while being engrossed is materially altered, and when returned, the decedent inquires: "Is the engrossed paper the same as the one which I approved?" He is answered, "Yes." He signs it. Now, such a will may be set aside; not on the ground of undue influence, but for positive fraud; and precisely the same rules of evidence would apply in that case, as would be required to set aside a deed or a contract in like case, *inter vivos*.

But in a multitude of cases, as I shall attempt to show, the burden of proof is entirely different in cases of undue influence affecting contracts, *inter vivos*, from that affecting wills. But I will refer to definitions as given by others, with some of which I agree, and as to the others I dissent.

The Lord Chancellor of England, Lord Cranworth, in the case of *Boyse vs. Roosborough*, decided in 1859, in the House of Lords, reported in the sixth volume of the House of Lords' reports for the years from 1857 to 1859, defines undue influence to be "coercion or fraud." I deem such a definition, with all due respect to the Lord Chancellor, a very imperfect one.

In the case of *Deitrich vs. Deitrich*, 5 Sargent & Rawle, the court holds that "any important abuse of the testator's confidence, by making him believe unfounded imputations against those entitled to his bounty, if done understandingly,

is held fraudulent, and comes under the designation of undue influence."

This definition is defective. *Small vs. Allen*, 8 Term Reports, 147. *Clark vs. Fisher*, 1 Paige, 171. In the case of *Hall vs. Hall*, 1 E. L. & Eq. Pr. & Div., the court says: "Importunity, or force, such as the testator has not the force or courage to resist; moral command asserted and yielded to for the sake of peace and quiet, or of escaping from distress of mind or social discomfit: these, if carried to a degree in which the free play of the testator's judgment, discretion, or interest is overborne, will constitute undue influence, although no force is either used or threatened."

In *Darley vs. Darly*, 3 Bradford, 481, a codicil was rejected on the ground that it was obtained by undue influence. The instructions for drawing the codicil were given by decedent. On this subject Surrogate Bradford says: "What is undue influence, and what degree of it requires to be exercised in order to have the act improperly procured judicially avoided, depends more upon the peculiar circumstances of each individual case than upon any abstract theoretical reasoning. I am not at all inclined to yield to the view that it must amount to actual duress in order to be unlawful, nor does there seem to be any strict analogy between the two cases. Duress may be exercised when the will has a present, independent power, and the man is conscious of it, but is compelled against his will. The force taken away, the pressure removed, he immediately asserts his independence. This is compulsion and violence—moral or physical.

There is a species of undue influence which resembles duress in its external action, and by its importunities compels an act against the real secret wish of the subject. But its most usual manner of approach and of action is more stealthy and subtle. It saps and undermines the will itself, obtaining, as it were, a foothold within, and shaping and molding the desires so that there no longer remains any wish to resist or power to withstand its suggestions. This

kind of influence is by far the most dangerous, from the fact that its movements are often quiet and noiseless, and its effects are hidden in the apparent volition of its subject. And yet this cannot be called duress.

The stronger will frequently acquires an extraordinary power over the weaker, not by mere dint of importunity, by threat or force, but by that steady persistence, that unrelenting pursuit of its purpose which wears away less stubborn determinations; or, again, by artfully taking advantage of the play of emotions and passions, appealing to prejudices, flattering weaknesses, and fomenting quarrels. A dominion thus acquired, if employed to effect a testamentary act, may be just as potent, distinct, and positive in the results as if coercion had been used; and I cannot perceive why it should not be viewed in the same light, and receive the same treatment at the hands of the court as palpable duress."

It is again said in 1 Jarman on Wills, page 29: "That in proportion as the infirmities of the testator expose him to deception, it becomes imperatively the duty, and should be anxiously the care of all persons assisting in the testamentary transaction, to be prepared with the clearest proof that no imposition has been practiced, but that the testator did in fact fully understand every portion of paper which he executed as his will." In *Weir vs. Fitzgerald*, 2 Bradf. Sur. R. 42, the learned Surrogate says: "Something more is necessary to establish the validity of the will in cases where, from infirmities of the testator, his impaired capacity, or the circumstances attending the transaction the usual inference cannot be drawn from the mere form, execution; additional evidence is therefore required that the testator's mind accompanied the will; that he knew what he was executing, and was cognizant of the provisions of the will. But the influence exercised over a testator which the law regards as undue or illegal, must be such as to destroy his free agency; but no matter how little the influence, if the free agency is destroyed it vitiates the act which is the result of it."

In 1 Jarman on Wills, 36, it is said: "That the amount of undue influence which will be sufficient to invalidate a will must of course vary with the strength or weakness of the mind of the testator; and the influence which would subdue and control a mind naturally weak, or one which had become impaired by age, sickness, disease, intemperance, or any other cause, might have no effect to overcome or mislead a mind naturally strong and unimpaired."

The undue influence is not often the subject of direct proof. It can be shown by all the facts and circumstances surrounding the testator, the nature of the will, his family relations, the condition of his health and mind, his dependency upon the subjection to the control of the person supposed to have wielded the influences, the opportunity and disposition of the person to wield it, and the acts and declarations of such person. (*Marvin vs. Marvin*, 3 Abb., Court of Appeal Cases, 192; *Reynolds vs. Root*, 62 Barb., 250; *Tyler vs. Gardiner*, 35 N. Y., 559; *Foreman vs. Smith*, 7 Lans., 443; *Lee vs. Dill*, 11 Abb. Pr. R., 214; *Dean vs. Negley*, 41 Penn., 312, 1.)

In determining the question of the validity of a will, the first matter to be considered is: Was the alleged testator, at the time of its execution, a person of sound mind? and if he was, then secondly: Was the instrument in question the expression of his genuine will, or was it the expression of a will created in his mind by coercion or fraud?

In the case of a raving lunatic, or of a simple idiot, there is no difficulty in saying that neither is capable of disposing of his property; but between such an extreme case and that of a man of perfectly sound and vigorous understanding there is every shade of intellect, every degree of mental capacity.

"There is no possibility of mistaking midnight for noon, but at what precise moment twilight becomes darkness, is hard to determine."

The Lord Chancellor in the case above referred to in the House of Lords, in 1859, says: "In order to determine that a will has been obtained by correction, it is not necessary to establish that actual violence has been used or even threatened."

The conduct of a person in vigorous health towards one feeble in body, although not unsound in mind, may be such as to excite terror and make him execute as his will an instrument which, if he had been free from such influence, he would not have executed.

But a different rule prevails in respect to the burden of proof as to gifts and contracts, *inter vivos*, from that which applies to wills.

In the case of *Paifitt vs. Lawless*, reported in the fourth volume of English Reports, as edited by Mr. Moak, of Albany, the true doctrine is, that undue influence cannot be presumed. The party alleging it must prove it. In that case Lord Penzance says: "In equity, persons standing in certain relations to each other, such as parent and child, man and wife, doctor and patient, attorney and client, guardian and ward, are subject to certain presumptions when transactions between them are brought in question. And if a gift or contract made in favor of him who holds the position of influence is challenged or impeached by him who is subject to that influence, the courts of equity cast on the former the *onus probandi* of proving that the transaction was fairly conducted as if between strangers; that the weaker was not unduly impressed by the natural influence of the stronger, or the inexperienced overreached by him of more mature intelligence."

See the very interesting case of *Haydock vs. Haydock*, 33 New Jersey Equity, where an excellent definition of undue influence is given.

In the case of gifts or other transactions, *inter vivos*, among the above named class of persons, it is considered by courts of equity that the natural influence which such relations as those in question involve, exerted by those

who possess it to gain a benefit for themselves, is an undue influence.

From the foregoing definitions and illustrations we may deduce the following rules. In order to set aside the will or deed or contract of a person by reason of undue influence, we must have :

1. A subject whose mind is impaired by disease or infirmity.
2. There must be fraudulent persuasion, or irresistible importunity.
3. The subject must be fraudulently induced to do that which he would not do if left free and in his normal condition.

When these concur we have *undue influence*; but when a man in the free and healthy possession of his powers is induced by trick, deceit, cunning, or circumventions, to execute a deed, a will, or make a contract, unjust to himself and others, such cases are denominated *actual frauds*, and redress should be given in the courts under that characterization.

With these general principles and definitions before us, we become interested in the examination of actual cases which may tend to their illustration.

It was my purpose at the commencement of the preparation of this paper, to give some of the prominent facts relating to a large number of leading cases in this country and England. The limits prescribed to the reading of a paper here, will only give me time to briefly allude to a few in this country, in addition to those already cited.

Higgins vs. Higgins is an interesting case. It was tried in the city of New York, in the Supreme Court, and was reported at length in the papers at the time, and in the Supreme Court reports. It was never taken to the Court of Appeals, and hence, does not appear in the reports of that court. The plaintiff, George Higgins, had been for over twenty-five years, the chief bookkeeper, cashier, and confidant of the eminent merchant, the late

A. T. Stewart. He had a large salary, and by his frugal habits, economy and careful investments, was accumulating a handsome property, when he met at a boarding house a strange woman, a gay, gushing, "grass widow," who induced him to marry her, without making any inquiry into her antecedents.

They lived comparatively happy for a year or two, when by reason of close confinement to his desk, for sixteen hours out of twenty-four, under severe mental strain, while cohabiting with such a woman, his health began to fail. He was treated for impotency, and began to show premonitory symptoms of paresis. As his will-power began to fail him, his wife commenced her importunities to induce him to transfer all his property to her. In a short time that was accomplished. His health failed to such an extent that soon after Mr. Stewart's death Judge Hilton, Stewart's successor, retired him from duty, on a salary in the nature of a pension, for a time.

Mr. Stewart, in his will, had made a bequest to Higgins, of \$10,000, using these words in his will, to wit: that the money was given him "in remembrance of long and faithful service." The legacy was paid to Higgins immediately after the proof of Mr. Stewart's will, and in less than three days, his wife induced him to transfer the check for the ten thousand dollars to her, which she immediately invested in real estate, taking the deed in her own name. She became so bold in her iniquity that she conceived the idea of getting rid of her husband by putting him into an insane asylum. She went to the authorities and represented that her husband was a pauper and was insane, and by the help of a wicked, pliable doctor, placed him in the pauper department of the violently insane, at Bellevue Hospital, where he remained among the worst of the lunatics for two or three days.

The authorities, finding him a broken-down, harmless man, far from being a lunatic, set him at liberty. She then conceived the idea of inducing him to commit suicide.

She told him that his money was all gone, and that she should put him in the poor house; beside, she said, that her friend had told her that Stewart's executor was about to arrest him for embezzlement. That the best way for him to do was to take a large dose of morphine; that he would go to sleep and never wake up; that would be the end of him; that there was no hereafter. The dread of being placed in a poor house preyed upon him. He had sense enough to disbelieve the story as to his proposed arrest, but he went out and bought the morphine. On his way home, his Roman Catholic teachings, as to the sin of suicide, came to his mind. He refused to take the nap which his kind wife advised. She then told him that as he had an acquaintance in Chicago, she would pay his fare to that city. She took him to the depot, bought a ticket, fastened it to him as a tag, as one would to a dog, for transportation. She put two dollars in his pocket to pay his expenses on the way.

He arrived in Chicago and found kind friends, by whom he was so kindly and tenderly nursed that in a few weeks he was able to return to New York in much better health. He at once commenced a suit against his wife to recover his property, on the ground of circumvention and undue influence. On the trial, which lasted about seven days, it was proven, that at the time he was married, he was led into the snare of marrying a woman who had a husband living; that she had been engaged in keeping a policy shop, which fact had been adroitly concealed from him. Expert alienists were put upon the stand to show the mental condition of Higgins at the time he made the transfer of his property to his wife.

The court made a decree restoring all the property in question to the plaintiff, on the ground that it had been fraudulently obtained from him by *undue influence*.

An interesting case was tried last year, in Chenango County, N. Y. The will and codicils thereto of Asa R. Foster were contested.

In every case that I have found in this country, except

this, the party exercising the undue influence has had some pecuniary interest or gain to accomplish as the reward for his iniquity. But in this case he would not be benefited in the least by the change he was seeking to make in the decedent's will. He had a spite against some of the relatives of testator, who had been provided for in the will; and he set about the work of having a new will made, and having the persons whom he disliked deprived of any part of the estate merely to gratify his malice. He accomplished his purpose, but the will was set aside on ground of undue influence.

Perhaps the Hancock case, reported in 22 Hun., 38, contains as many interesting points on the subject of undue influence as any other reported case. It occupied over four years in taking testimony, at intervals, in the Probate Court. I can only call attention briefly to a small number of its peculiar features.

For the better understanding of the case, a biographical sketch of decedent will be proper. Hancock was born in England about eighty-four years ago. He left no widow or children. In person he was about five feet eight inches in height, of heavy form, rather large neck, and florid complexion. He was a moral and very polite man, but of an irritable and impetuous temper, hasty in his conclusions, and sometimes uncharitable in his judgment of men.

He was very upright in his dealings, full of sympathy for the poor and oppressed, and abounding in benevolence. In 1850, he was engaged in the hosiery business in the city of New York, in company with Mr. C. M. Carpenter. He continued in business for nineteen years, and amassed a fortune of over two hundred thousand dollars. During all these years, and until he became demented, a very warm personal attachment existed between himself and Mr. Carpenter, so much so that he never engaged in any important business transaction without consulting him. He frequently said that he was under more obligation to Mr. Carpenter for his fortune than any other person living. In 1869, he made a will, appointing Mr. Carpenter one of

his executors, making a large bequest to him and to his family, and vesting in him important trusts.

While he was accumulating his fortune, he made his home with Mrs. Thatcher, a kind, genial, and most estimable widow lady, who was then keeping house in Brooklyn. She having removed to Orange, N. J., he went there to reside with her, and to make that his home, her son, until his premature death, being one of his favorite employees; her daughters nursing and watching him in his sickness with filial care and tenderness, and their mother sparing neither care, nor time nor toil, nor expense, in making him such a home as his circumstances would suggest while in active business pursuits, and such an asylum as his infirmities seemed to require in his declining years.

He spoke of her home as his home, and of her daughters with a tenderness akin to parental affection. That lady and her daughters, he liberally provided for in a will of 1869, and another will of 1874. He increased the amount to Mrs. Thatcher in the will of 1874. He had a nephew whom he had educated, who had entered one of the learned professions. That nephew had been abundantly remembered in the will of 1869 and in a will of 1873. He was bequeathed a large sum in the will of 1874 and was made an executor in the will of 1874.

Intermediate the date of the will of 1869 and the will of January 1874, a number of papers had been drawn at the request of Hancock, designed to be executed by him as his will, in all of which he had made large legacies to Mr. Carpenter, Mrs. Thatcher, and her daughters, and to his nephew. Whether those papers were ever executed does not appear. The fact of his friendly regard for all these persons does appear, and continued to be manifested until he became the victim of the frauds hereafter mentioned.

His plan for the distribution of his estate was, to bestow about one-half upon his kindred, and divide the other half between his personal friends and benevolent societies.

His mind and memory began to fail him soon after the year 1869. In 1874 he was informed by an eminent phy-

sician, Dr. Pierson, that a slow paralysis was coming upon him. In February, 1874, he had a severe stroke of paralysis. From that time until his death, his mental powers failed to such an extent that at the time the two codicils, dated April 14, 1874, and July 1st, 1874, were executed, his testamentary capacity was all gone. The second and third alleged codicils to his will were contested, on the ground of fraud and undue influence.

In April, 1874, he went to the house of his brother-in-law, in Nanuet, to visit his sisters, with the view of returning to his home in Orange. His illness increased. He was induced to remain at Nanuet, where he languished during the summer, and on the 12th day of September, died. How, during that fatal summer, the whole purposes of his life became apparently changed; how the proponent, for whom through life he manifested the greatest aversion, came to be appointed his executor in place of his friend; how all the bequests to Mrs. Thatcher and her daughters, and to Mr. Carpenter, and to his nephew, and to most of the charities came to be revoked; and how his life-long friendship for Mr. Carpenter and his nephew was turned to hate; and why it was that frauds and impositions were practiced upon that dying man to such an extent as to deprive him of the ability to make a free and valid disposition of his estate; and why alleged codicils to his will were absolutely void,[¶] it becomes interesting to consider.

The line of attack upon the codicils consisted principally of four divisions:

1. To prove his[¶] failure of memory.
2. To show the physical infirmities of the decedent.
3. The duress, restraint, and deception to which he was subjected.
4. The actual frauds that were practiced upon him.

There were sixteen witnesses placed on the stand by the contestants, most of whom had long been acquainted with the decedent, and had many business transactions with him, to testify respecting his memory.

They described forty-nine distinct instances showing

defect of mind and memory, aside from the testimony given by the experts.

He was proved to be unable to recall places, or remember the locality of his recent familiar resorts. Having bought clothing, he would be unable to say the next day how he came by it. He would deny it belonged to him. Having burned the draft of one of his wills, he forgot what became of it, and accused one of his friends of having carried it out of the country.

Having made a codicil to his last will, disinheriting a beloved friend, he was asked if such was the fact, and he stoutly denied it, and claimed that the friend was a legatee to a large amount. He would furnish his lawyer with a draft of a will, in his own hand writing, and come the next day with another, and when told that he had furnished one the day before, he would deny it; and on being shown the paper which he had left, would say: "Oh, yes! I had forgotten all about it." This happened on as many as ten or twelve occasions.

He was unable to recall the names of the beneficiaries under his often-prepared, but unexecuted wills. He was unable to recall to his mind the condition of his estate. These are only a few specimens of his failure of memory.

II. His physical infirmities were proven to consist of paralysis under the designation of hemiplegia; also an aggravated form of diabetes melitus and senile dementia. Dr. Pierson, of New Jersey, who had been his medical attendant, made a thorough diagnosis of his case.

Drs. Pierson, Corey and Dougherty all testified that the mind of the decedent was so impaired as to be unfit to make a valid will.

III. The testimony was conclusive that he was restrained by the proponents to remain with them away from his home, his confidential friends, his nurses, and his trusted advisers, where he had a right to be, to prepare for the solemn scenes of his approaching dissolution.

IV. The actual frauds that were practiced may be grouped together as follows:

First. They conceived the plan of making him believe that the will of January, 1874, was void, for informality in its execution.

They saw that before anything was to be said against any bequests, or against the character of any of the legatees, in order that they might not be met with the argument that it was too late now, that the will had been made, no changes could now be made, it would become necessary to get rid of the will of 1874, either by a new one or by codicils thereto; when that was out of the way, then an open field would lie before them to make out such a will as would suit themselves; hence, they commenced fraud number one, which consisted in impressing on his weak mind, the adroit, well-planned, but transparent lie, that the will of January, 1874, was defective because the subscribing witnesses had not put down their residences. All lawyers know, most laymen know, that such an omission does not invalidate the will.

The evidence was that the proponents had talked over the pretended effect. It is apparent that they had taken it to some lawyer, and he had told them that the omission did not invalidate the will; but they resolved to use the discovery as a "good enough Morgan," and hence they persisted in playing the fraud upon him by telling him that the will was not properly executed. He often said, "I don't want to make any changes in my will." The proponent gives one of his lucid versions of the matter.

Question. Did you ever state to the testator, at any time, that the places of the residences of the different witnesses were not stated in the will, or were not known; and that such omission might prove embarrassing in the future, or words to that effect?

Answer. I can't say for certain. I might possibly have said it.

Q. Did you ever hear your wife or her sister say to the testator anything like that?

A. I think I heard my sister-in-law say to the testator, that the place of their residence was not in the will.

Q. When did you hear her say that?

A. I think it was some time in October, 1874. No; it was a month or two before he died. It was in July, 1874. No; I recollect now, it was in September. I remember the circumstance.

Q. What time?

A. It was the evening of the day of the funeral.

This fraud was practiced on the dying man at the very time when he was protesting that he wanted to make no changes in his will. But having yielded to fears excited, that his will was void, by reason of the omission of the witnesses to state their residences, aroused by the fear of dying intestate, he yields that point, and consents either to make a new will, or make codicils, or have the lawyer come and fix it so that it would be legal.

Having gained the first point, and overcome his express desire "not to make any changes," the remaining task to accomplish any and all other wicked purposes was easy. Having by fraud, made the decedent consent to make new codicils, the next step was to determine in the minds of the conspirators *what* changes should be made.

Fraud No. 2 consisted of the scheme to get rid of Mr. Carpenter. That was to be brought about by using the scissors on the letter of the nephew, and parading the words before the remnants of the intellect of that slowly dying paralytic, "Carpenter is a villain. Carpenter's no man to be an executor. Your own dear nephew says he is a villain, and has undoubted proof."

The nephew had written his uncle a letter which would have been damaging to the proponents, if put in evidence, but it contained the words "Carpenter is a villain. He is no man to be executor." The proponents' counsel were so unwise as to cut out those words, and offer them in evidence detached from the letter. The truth was that this nephew was anxious to have Carpenter discarded as executor, in order that he might have the place himself. It turned out to be a boomerang to trouble him.

It became necessary to say nothing against the nephew while they were manipulating matters against Carpenter; because they were using the nephew as a witness against Carpenter. But as soon as they deemed the mind of the decedent sufficiently poisoned against Carpenter, they then opened against the nephew himself.

Fraud No. 3, which consisted of the cut leaves which the nephew had attempted to explain. The decedent, no doubt to get rid of their importunities, while in his weak state of mind said, "Yes; strike out Alex.; if he would do all this he must be a rascal and a villain." And yet in his lucid intervals, it is evident that he did not know that he had cut his nephew out of his will.

The next step in this drama of fraud was to get rid of Mrs. Thatcher and her daughter and the little orphan children at Orange. So firmly were the testator's affections placed upon this lady and her family, that they dared not open their schemes against her until May or June, nor until that enervating disease which they saw was rapidly carrying their victim to the tomb, had made him an easy prey to their designs.

Fraud No. 4, consisted in creating the delusion that Mrs. Thatcher had been robbing him. This was done by the proponent, with the aid of others in his family, as the evidence shows, substantially as follows:

After discussing what had been done for Mrs. Thatcher, proponent brings in the books and says: "Why, John, I can't make out anything from these books. They are all wrong. They have had them at Mrs. Thatcher's. They have fixed them to suit themselves. Why, you have been robbed." The decedent did not stop to see what sort of a bookkeeper was addressing him. No wonder the proponent could not make out anything from the books. It would have been as appropriate to employ him in calculating an eclipse of the sun as to ask him to determine correct results from his examination of a set of account books.

Hancock had made his home at Mrs. Thatcher's for

nearly fifteen years. A man of Hancock's wealth could well afford to pay for such care and nursing as he enjoyed, at least \$2,000 per year, a sum equal to \$30,000. He knew that all the money that Mrs. Thatcher had received was nothing like that sum, and yet he attempted to impress upon the mind of the decedent that he had been robbed by Mrs. Thatcher.

But they had other arrows in their quiver. Maria comes to the front—she tells her brother that Mrs. Thatcher had tried to marry him and tried to seduce him. By what process the mind of the decedent was filled with the delusion that his friends at Orange intended to poison him, is known to none but Omniscience, and the proponents' family.

But the law has wisely and humanely stepped in and said, that the contestants are not bound to prove the process by which the delusion is created. It is enough to show the existence of the delusion. The Court of Appeals said in the case of *Tyler vs. Gradiner*, herein before cited (35 N. Y., 594):

“It is not to be supposed that fraud and undue influence are ordinarily susceptible of direct proof.”

This very delusion in reference to fear of poison, while it was used as an influence to deprive Mrs. Thatcher of any share in the estate, is a powerful argument that the decedent was insane.

In *Seamen's Friend Society vs. Hopper* (33 N. Y., 624) the law is laid down as follows:

“If a person persistently believes supposed facts which have no real existence, except in his perverted imagination, and against all evidence and probability, and conducts himself, however logically upon the assumption of their existence, he is, so far as they are concerned, under a marked delusion; and delusion in that sense is insanity.”

The two codicils were set aside by the Probate Judge, on the ground of undue influence alone. His decree was affirmed at the General Term of the Supreme Court, and

again by the Court of Appeals. The case is reported in the Supreme Court, in 22 Hun., 40.

The opinion of the Surrogate was very learned, lengthy and elaborate, while it was followed in the higher courts, yet it was not *republished* in the appellate courts.

On a Case of Prolonged Sleep.*

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DURING the latter part of March and the beginning of April, 1887, considerable interest was aroused by details, not always very accurate, published in the London press concerning the so-called "Soho Sleeper." The hero of the adventure was a Frenchman, forty years of age, who had fallen into a singular sleep or trance, and remained in that condition for about a fortnight. However regrettable it certainly is that such an occurrence should have become the subject of notoriety and morbid curiosity, yet the mischief being done, I venture to offer here a few remarks in explanation of the physiology and pathology of a case which has so unnecessarily been surrounded with a halo of spurious mystery.

When we speak of a man "sleeping" for several days or weeks consecutively, it is obvious that we do not use the term in its ordinary sense. We all know by experience what sleep is, and we cannot conceive ourselves going on sleeping for an indefinite time. Yet it is difficult to draw a line between normal and abnormal sleep; the physiological condition merges by insensible degrees into all kinds of pathological states, known as lethargy, trance, coma and stupor. Through the usual phenomena of dreaming, we pass likewise into those of nightmare, somnambulism, hypnotism, ecstasy, and the like. Yet it is important sharply to define typical instances of all these conditions, so as to avoid hopeless confusion in an already obscure field of scientific inquiry, and though we may for the sake of convenience occasionally use the term sleep in the wider sense, yet the distinction between

* A portion of this paper appeared in the London "Fortnightly Review," May, 1887, under the title of "Sleep and its Counterfeits."

the various states included under it must be kept present to our minds. A library could easily be filled with writings on the subject of physiological sleep. And yet a candid inquirer may well feel doubtful as to whether we have reached a true explanation of its nature and causation. Some authors think they can refer normal sleep to a state of the circulation in the brain. We know, they say, the cerebral vessels of a man asleep contain less blood than in the waking state. Hence, given a contraction of those vessels, is it not natural to infer that he sleeps because the brain cells cease to receive their due amount of oxygen and food, and consequently suffer an arrest of their functions? This is no doubt a very plausible explanation. But apart from the fact that certain drugs known as narcotics produce congestion, or overfullness of the cerebral vessels, and yet induce sleep, we have only removed the difficulty one step. Why do the blood-vessels contract? Is it not more conformable to what we know of the activity of other organs to assume that the supply of blood is regulated by the wants of the organ itself? And we know that the nervous mechanism which presides over the dilatation and contraction of the blood-vessels is itself largely under the control of influences brought to bear upon it from the various organs and tissues of the body. The insufficiency of the so-called vasomotor theory of sleep has induced certain physiologists to look to the brain cells themselves for the seat of the processes leading to the temporary suspension of their functions, of which sleep is the outward manifestation. The life and activity of these cells, like that of all other living elements, consists in an active series of chemical changes. A constant destruction and reconstruction of their substance takes place, that postulate two conditions for the effectual maintenance of the process, viz., the presence of sufficient living matter to be oxydized in the cell, and the removal of the products of that oxydation from the cell. Now according to some writers the brain ceases to work because its cells containing but a

limited quantity of living pabulum become exhausted, and do not resume their functions until a fresh supply has been deposited from the blood within their walls. According to others the brain ceases to work because its cells do not eliminate the products of waste with sufficient rapidity, and so become choked up so to speak, and must perforce remain quiescent until the products of oxydation have been washed out by the blood.

To make use of a commonplace parallel, the brain is, according to these physiologists, a furnace in which the fire goes out owing either to a deficiency of coal supply or to accumulation of ashes.

There is no doubt much to be said on either side; and perhaps both the dwindling supply of combustible, and the accumulation of used-up matter in the cerebral cells play their part in the production of healthy sleep. But these simple chemical theories do not nearly account for all the manifestations of such a highly complex living mechanism as the brain. To mention only one factor which the "asphyxia" and "starvation" hypotheses of sleep leave out of sight is the undoubted effect of the absence of external or internal stimuli on the production of sleep. It is in everybody's experience that mental and moral quietude, the absence of light and sound, will bring on sleep under conditions which exclude every idea of brain-block or exhaustion as just defined. On the other hand, we have all felt how light, sound, conversation, and the like, can keep up the activity of a brain condemned on the physiological theories just stated to asphyxia from want or obstruction.

The promotion of sleep by the absence of any sensory excitation from without, and of any disturbing state of consciousness from within, is, however, only a negative condition. But there are certain peripheral impressions, from the organs of touch and hearing especially, which are conducive to quiescence. I refer to gentle, uniform, rhythmic stimuli, such as the sound of dropping water, or of a monotonous voice, or a succession of light strokings of the

skin. The rocking of babies in their cradles is an application of this principle. The sense of sight may likewise become the channel of somniferous impressions of the same character, and it is upon this fact that is based the recipe against insomnia, according to which the patient is to call up and watch the mental picture of a hundred sheep successively jumping over a bar. Since the researches of Braid, who demonstrated that the so-called "mesmeric" sleep had nothing to do with "animal magnetism," or "odoric force," or any other such real or imaginary agents, numerous experimenters have enlarged our knowledge concerning the phenomena grouped under the name of hypnotism. It is now demonstrated beyond any possibility of doubt that the so-called nervous sleep is the result of sensory impressions made upon the brain through the eye or skin, usually by means of the so-called "passes," or of the fixation of a small, near object. The study of these phenomena on hysterical patients has been especially fruitful, partly because almost any sensory excitation may become the means of sending them into a profound hypnotic condition, partly because their usual state of unstable nervous equilibrium accentuates to their extreme limits the various modifications of the organism that characterize this artificial sleep.

From among the immense number of strange phenomena observed at Saltpêtrière, where this subject has chiefly been investigated, and where I had the opportunity of studying it, I shall adduce only such as have a direct bearing upon the case of the "Soho Sleeper."

It is well to point out at once that shamming and exaggeration is excluded as a possible explanation of many of these hypnotic manifestations, because they are of a physical order which admits of direct methods of investigation and proof.

It is often possible to distinguish between a somnambulistic, a lethargic, and a cataleptic condition of the hypnotized hysterical subject, and by appropriate manipulations (all based on the theory of influencing the cerebral centers

by peripheral sensory impressions) to make the subject pass from one to the other of these states. Supposing we have by ocular fixation or otherwise induced the *lethargic* state, we find that the muscles and nerves of the subject are in a state of extreme hyper-excitability. If with the finger, or a pencil, we press through the skin upon a nerve trunk all the muscles supplied by that nerve are instantly thrown into a state of violent contraction. This contraction, strange to say, may, if unchecked, persist not only during the whole period of lethargy, but may last for hours, or even days, after the patient has waked up, and does not then relax even during the interval of normal sleep. On the other hand, the rigidity immediately gives way under the influence of gentle stroking of the skin over the contracted muscles.

By *catalepsy* is meant a condition of suspended psychical manifestations on the part of the subject, during which the limbs manifest no muscular and nervous hyper-excitability, but possess the singular property, whilst remaining flexible, of preserving indefinitely any attitude imparted to them, hence the name of "waxy flexibility" given to this condition by old writers. Unlike the rigid spasms of the lethargic muscle, the plastic fixity of the cataleptic limb cannot be relaxed by friction over the skin. The aspect of the patient in the two conditions, moreover, offers striking differences, the sleep-like resolution of lethargy contrasting vividly with the petrified attitudes of catalepsy. In both conditions, however, there often is the same absolute insensibility, even to the most painful stimuli. A most remarkable phenomenon may be observed in some instances: by merely opening one eye of the lethargic patient the corresponding side of the body is cataleptized. And so in the same subject these two phases of the hypnotic sleep may co-exist side by side, with the fullest display of their contrasted characteristics.

The third condition, that of *somnambulistic* hypnotism, may easily be brought about by light pressure or rubbing on the top of the head. The patient then passes into a

state somewhat between the resolution of lethargy and the fixity of the cataleptic condition. The muscles have lost the hyper-excitability of the former state, and do not possess the plastic adaptability of the latter. Still they react abnormally to light external stimuli; if we very gently stroke, or blow upon, a limb, it becomes somewhat rigid. We cannot then relax it by a mere touch, as in lethargy, and it offers some resistance when we attempt to mould it into a different attitude, as in catalepsy. Insensibility to pain may persist, but there often is in the somnambulic phase a singular exaltation of memory and of sensorial perception, which has caused it to be called the "lucid state," and has been described by the devotees of the mesmeric delusion as a "second sight." Our readers will recognize in this description the ordinary "magnetic" or "mesmeric" sleep into which not only hysterical, but many other individuals may be more or less completely plunged by the usual "passes" of the old operators.

It is especially in the somnambulistic state that the astonishing phenomena of *suggestion* are observed. By this term is meant that the patient in whom every spontaneity is in abeyance, who does not "sleep," and yet does not move or think, can be so impressed through some sensory channel as to enter upon some definite train of ideas or movements. He is under the control of the experimenter, whose will is his will, so to speak. He is a machine ready to go, but unable to start himself.

There are many different ways of imparting suggestions to a hypnotized subject. As in other phases of hypnotism, it is hysterical patients that present the greatest variety of manifestations when subjected to suggestive influences. The most characteristic phenomena are those known as "muscular" suggestions. If we analyze an emotional attitude such as that of sending kisses to a beloved person, or that of threatening an enemy with the fist and outstretched arm, we notice that the whole frame partakes in a general posture. The muscles of the face are thrown into action, and an appropriate play of the features

accompanies the leading gesture. This collaboration of several parts of the body in the production of a common effect depends upon the existence in our nervous system of certain mechanisms subservient to the function of mimic language or physical expression. Now if in the hypnotized subject we throw a limb into such an expressive attitude we immediately see the usual concomitants of the movement follow suit; the trunk and other limbs fall into a harmonious posture, the carriage of the head is modified likewise, and the expression assumed by the face and eyes is so perfect as to equal or surpass the best efforts of the most consummate actor. It is difficult for anyone who has not witnessed the spectacle to realize the perfection of mimicry reached by the hypnotized hystero-epileptic. The cause of this phenomenon is not far to seek; the impression conveyed by the nerves from the part placed in the attitude has called into action the whole nervous mechanism presiding over the movements generally associated with this attitude. But this is not all. Duchenne has analyzed minutely the anatomy of expression of the human face, and by means of electric currents localized in certain muscles or combinations of muscles, imitated with great success the facial play indicative of the various emotions and feelings of the mind. Now, if in our subject we likewise electrically stimulate certain muscles, and artificially produce an expression of anger, or terror, or love, or disdain, the corresponding attitude is at once assumed by the neck, arms and body generally. Those of our readers who have access to the book will find remarkable illustrations of these phenomena in Dr. Richer's great work on "*Hystero-Epilepsy*" (second edition, p. 668), for the accuracy of which all those who have had the opportunity of studying hypnotic manifestations in hystero-epileptics will be ready to vouch.

Whole series of muscular actions may be imitated by appealing to the so-called "muscular sense" by similar methods of suggestion. Thus, if a hanging rope be placed in the hands of the patient, she begins to climb

with incredible energy and alacrity; when placed on all-fours, she runs in that position all over the room, mindless of knocks and collisions. Again: if the movement of washing her hands with soap be imitated, she will persist in the movement for an indefinite time. It is sometimes difficult to check an action so started except by waking the patient up or making her pass into lethargy. The hypnotized patient therefore is much in the state of the brainless frog that, if thrown into a pond, begins to swim at the contact of the water, aimlessly, automatically.

Sometimes a movement repeatedly executed by the operator in front of the patient will be imitated and carried out by the patient until stopped: this is a case of suggestion through the organ of sight. Or more complicated trains of movement may be initiated by presenting to her objects suggestive of certain actions, such as a plate and spoon, a brush and comb, and the like. The sight of a boot will start an endless repetition of putting it on, lacing and unlacing, taking it off, putting it on again, and so on indefinitely.

The field of suggestions through the ear by means of language is boundless. Such words as "rats," "bird," "flower," wake up a train of imagery in the patient's brain which is immediately projected outward in an expressive display of appropriate gestures of aversion or desire, and corresponding movements of avoidance or capture. If, in deep hypnotism, the subject is immediately wrapt up in those creations of the imagination; if slightly hypnotised only, repetition of the suggestive words are needed to neutralize the controlling influence of the senses. The ordinary phenomena of hypnotism, the impossibility in which the subject feels himself to escape the inhibiting influence of the suggestion, belongs to this category. You suggest to him that he cannot move his arm, for instance; he feels he can, and yet cannot. The volitional current from his higher brain centers is neutralized, as it were, by the ideational current from other centers in which the order has created a fixed idea of his

own incapacity. As hypn  sis becomes deeper every trace of resistance disappears, and the fixed idea reigns supreme.

Such are the leading phenomena of hypnotism as observed in those highly sensitive subjects, the sufferers from the graver form of hysteria, or hystero-epilepsy. It would take us too far to describe the various symptoms of this form of nervous derangement, which, though comparatively common in France and among certain other nations, seems to be very rare, at least in its full development, among the Germanic races. In Dr. Richer's work, already mentioned, a full account is given of the appalling violence of the convulsive seizures and of the delirium that characterize the disease. Epidemics of hystero-epilepsy were rife in the middle ages, especially among the members of religious bodies; and even now it seems to be closely related to superstitions or mystical beliefs and practices.

Though essentially a disease of the female nervous organization, many instances are found of men suffering from more or less mitigated forms of hystero-epilepsy. The less striking symptoms of it, such as various forms of paralysis, loss of sensation, loss of speech (aphasia), however, are sufficiently developed in certain male subjects as to justify us in classing them in the hysterical category of nerve sufferers.

Among this group the "Soho Sleeper" deserves to hold a high place, as will become manifest on reading the following condensed r  sum   of his history, as published by Professor Charcot, in the *Progres Medical* for March, 1886, and completed by further details published in recent numbers of the *British Medical Journal*:

Ch. was born in 1848, and his family history points to a strong neurotic heredity. He served in the French army in Algiers; and during the Franco-German war received a wound in the left elbow, which led to amputation of the arm (1871). A few months later he was seized whilst at supper with unconquerable drowsiness, from which he couldn't be aroused. The next morning he broke out into a terrific delirium that lasted two days. A second attack of a similar nature occurred soon after. In 1875 he

suffered from strange nervous symptoms, and in 1878 had another attack of sleep, followed by a long period of imperfect articulation. In 1880 he was seized again; and in addition to complete loss of speech, there was loss of feeling and movement of the left leg. He remained six months under treatment. Since then there has been a series of relapses, after one of which (1885) he came under the notice of Professor Charcot, in the Salpêtrière Hospital. He was then found to have lost, to a great extent, sensation on the left side. He could not articulate a single sound, but could express himself freely by writing. He was troubled with nightmare, in which the hallucinations of his former delirium seizures used to recur. He recovered his speech quite suddenly, without passing through the period of stammering as on former occasions.

During the fifteen months that elapsed till his arrival in London, he seems to have gone several times through his usual ordeal of sleep, followed by loss of speech and paralysis of the left leg. The attack which he has just had seems to have been excited by the emotion he experienced on being robbed of all his money (March 24th). The somnolent stage lasted about a fortnight, and was followed by the usual paralytic and aphasic condition. During his torpor his eyes were shut, and his general appearance was that of a man in a deep, profound sleep. He did not react to the loudest of sounds; but if a ray of light was cast upon the pupil the eyelids gradually opened, and the eyeballs converged towards the bright object. The results of the various experiments made upon the patient in his trance-like state illustrate several of the hypnotic phenomena already described as observed in hystero-epileptic patients. His muscles presented both the hyper-excitability and the plastic peculiarities that characterize the lethargic and the cataleptic phases respectively of the artificially-induced sleep, but with the difference that they both co-existed, whether the eyes were shut or opened. The same phenomena of suggestion through the "muscular sense" could easily be elicited. For instance, a series of movements imparted to the face, arm or leg, was automatically repeated, and continued for an indefinite time. Again: on imparting to his extremity an attitude of menace with outstretched arm and clenched fist, his eyes (previously opened) suddenly turned towards the limb, and he assumed an expression of anger verging on ferocity. I noticed that on interposing an opaque object between the eyes and the arm, the latter speedily relaxed and fell, the eyes closed, and the patient relapsed into his accustomed slumber.

During the second week of the trance he began to react to orders repeatedly given, such as "Open your eyes," "Sit up," etc., and to answer simple questions by writing. He could be made to write anything to dictation; but whenever ordered to indite a letter, he repeated the same that probably was one he had written shortly before this attack.

Finally, he was found to have lost sensation in the left side; but powerful electrization, though it failed to rouse him up, induced convulsions and spasms, typical of the regular hystero-epileptic seizure.

There is thus no doubt left as to the nature of the case of the "Soho Sleeper." Among other instances of

attacks of sleep in the course of hystero-epilepsy, I may mention a patient whom Professor Charcot has had under his observation for many years :

She first came to Saltpêtrière Hospital in 1862, and presented many of the alterations of sensation and movement characteristic of the disorder. On April 7th, 1875, she was seized with somnolency, which persisted with temporary awakenings till the 27th. There occurred then a violent outburst of paroxysmal laughter and weeping. From that moment the patient passed into a cataleptiform condition, with occasional hysterical fits of the same description. She had to be fed with a spoon; she swallowed as if automatically, with a noise, but without any signs of consciousness. She awoke quite abruptly on the 7th of June, and affirmed to have no recollection of what had taken place during the past two months. There occurred in 1876 another fit of the same kind, that lasted about a fortnight.

In order to illustrate further the intimate connection between certain morbid forms of sleep and the hysterical diathesis, I shall briefly allude to the so-called "hystero-genous" and "hypnogenous" pressure points discovered by Professors Charcot and Pitres.

A very remarkable phenomenon connected with grave hysteria is the artificial production and arrest of attacks by pressure on certain points on the surface of the body. The number and distribution of these points is very variable, and differs in every case. They usually can only be found out by careful search, the patients themselves ignoring their existence until they have been pointed out to them.

On pressure being exerted upon one of these "hystero-genous" spots the patient falls into a convulsive or tetanic spasm, and the various phases of the attack succeed one another much in the same way as in a spontaneous fit. Now it is a curious fact that a repetition of the pressure on the same spot, or on some other spot experimentally discovered, will often abruptly modify or arrest the attack. The great theoretical and practical importance of this singular property of certain circumscribed cutaneous areas has directed the investigations of several careful observers, and led to the discovery of similar spots, called "hypnogenous," pressure upon which determines,

not a muscular spasm or convulsion, but an attack of hypnotic sleep.

These hypnogenous areas are likewise irregular in their number and distribution; and along with them are usually found other spots, usually on the opposite side of the body, pressure on which awakes the patient. We have here an undoubted argument in favor of the view which makes out the attacks of sleep in certain hystero-epileptics to be mere modifications of the typical convulsive and delirious seizure.

The annals of medicine contain many other instances of prolonged sleep observed in others than victims of the graver forms of hysteria. Here is a case recently described (*Lancet*, 1883) by Professor Gairdner, of Glasgow :

Mrs. Mac, a native of Skye, who had through life enjoyed all her physical and mental faculties, but with a history of nervous disorder among her relatives, gave birth to her sixth child in May of 1883. She then gave signs of slight hysterical derangement (globus palpitation), and on July 8th, without any warning, she suddenly went off to sleep in a chair, and from that moment remained in a state of deep unconsciousness for nearly six months. She was carefully observed by a number of highly competent medical men throughout this period. Her limbs were completely relaxed, without any trace of cataleptic or other rigidity and without a single movement of a volitional description. She was fed by means of a stomach tube. Her appearance was that of one in deep slumber; no evidence of sensation could be elicited by sounds, electricity, or pinching the skin. Feeble reflex movements could be elicited, especially in the eyelids. An attempt was made to arouse her by continuous application of heat to the skull; but no result ensued except a slight improvement in the circulation.

Professor Gairdner insists upon the fact that at no period of the illness was there any symptoms of apparent death. The face preserved its color, and at times was rather flushed. The body always felt fairly warm and moist. The breathing (12 to 16 per minute) was distinctly noticeable though shallow; and the pulse (72 to 76) regular and quite perceptible at the wrist. The pupils varied in size but reacted to light.

Towards the end of November signs of returning consciousness were for the first time observed. Once, on the occasion of a visit by her husband, whose presence she seemed to recognize, giving some signs of emotion; and the next day, when she was heard to mutter a prayer in Gaelic, and was found to hear and answer questions. She remembered nothing that had happened since her confinement. From that time the patient was restored to her usual health.

As Professor Gairdner remarks, this is a case, remarkable chiefly by the absence of the adventitious and more or less romantic incidents that characterize the true cataleptic and ecstatic seizures. The patient is the mother of a family, healthy, morally and physically; she has had no religious or other excitement to upset her cerebral equilibrium. No motive can possibly be discovered that could have induced her to resort to imposture or exaggeration. She is thankful for her recovery, and manifests no craving for sympathy. The only element which can be adduced as a factor of her singular nervous manifestations is a hereditary predisposition; several of her relations have suffered from mental aberration, and we must not forget that the question of heredity has in our modern conceptions of nervous disorders the same importance which it has long possessed with reference to tubercular and other diseases.

But there is another point which may be discussed here in connection with this case; I mean the influence of *race* on the development of nervous symptoms. Dr. Gairdner's patient belonged to the Celtic family.

The statistic researches of Althaus have led him to formulate the axiom that "Nervous diseases are not, as is commonly asserted, more frequent, but on the contrary less numerous, in large towns than in the country, and it is probable that their occurrence is powerfully influenced by race." He adduces a table in which the percentages of deaths from nervous diseases (as recorded in the Registrar-General's returns) for London, the southwestern counties and Wales, are 10.66, 11.20, 15.38 respectively. He has found that "Wales exceeds all English counties so strikingly in this respect that neither density of population nor climate, nor difference of occupation will account for that circumstance." He is therefore inclined to attribute this difference to another circumstance, viz., the difference of race—a conclusion that is borne out in a certain measure by the undoubted greater prevalence of hystero-epilepsy among the Latin, and perhaps also

the Slave races, as compared with those of Germanic origin.

It is probable in considerations of this nature that we shall find an answer to the question often asked in this country from those who do not roundly attribute all or most of the symptoms of hystero-epilepsy to shamming or exaggeration: "How is it that such cases never come to our notice?" Is it not because of those radical differences which run deep in the nervous constitution of individuals? At any rate the presence of the "Soho Sleeper" among us will, let us hope, modify the somewhat insular skepticism still lurking in many breasts on this side of the Channel.

The subject of prolonged sleep and trance is intimately connected with that of apparent death. Though there is no doubt that most of the dreadful tales concerning the premature burial of persons supposed to be dead have no foundation, save in the imagination of the public, we have ample proof of the possibility of such mistakes occurring in the absence of a careful examination of the body. Everyone has heard of the fatal tragedy in which the greatest anatomist of his times, Vesalius, played such an unfortunate part. Being called upon, during his stay in Spain, to perform the autopsy of a patient who had died suddenly, he proceeded to open the body, when, to the horror of the bystanders, at the second sweep of the knife, unmistakable signs of life were given.

The *Journal des Savants* for 1745 speaks of an English colonel who refused to allow the body of his wife to be removed for burial, unable, through the affection he bore her, to realize her death. He threatened to blow out the brains of anyone daring to come near. For eight days he watched over the body, cold, motionless, but still fresh and unaltered, when suddenly the bells of a church beginning to ring, she sat up and said, "It is the last prayer bell—it is time to go."

It is difficult to imagine how in the case of patients subject to cataleptic seizures, and known by their friends to be so, periods of suspended animation, however protracted, could ever lead to premature burial. Pseudler,

however, states to have known two cases in which a disastrous result was very near happening.

A Viennese lady, who had suffered for a long time from cataleptic or lethargic attacks, was finally buried in one of her trances. The sexton, who fortunately happened to be a thief in this instance, had reopened the grave, was busy removing her clothes, during the ensuing night, when a resurrection of the dead took place. Stricken with terror, he was running away, when the woman called him back, requesting to be taken to her doctor.

The second instance referred to by Pfeudler is that of a young lady, aged fifteen, who, after a convulsive attack, had St. Vitus's dance and other nervous symptoms. Finally she became subject to fits of sleep lasting several days. Her health suffered greatly, and the exhaustion became such that after a consultation of the first physicians every hope of her recovery was given up. The next day she suddenly started as if to embrace the attendant who was watching her, and fell back as if dead. All usual tests failed to detect any sign of life. Finally, funeral preparations were made; she was dressed in white, the bell was tolling. Still uneasy about the absence of any sign of decomposition, Pfeudler was making a last examination, when he detected a faint respiratory movement. After an hour and a half's friction and stimulation, movement returned; and the patient, looking about and smiling, said, "I am too young to die." She then fell into a sleep of ten hours' duration, and woke up in full convalescence. The patient in this case never lost consciousness, and remembered afterwards what had been said and done in the room during the medical consultation and funeral preparations.

This survival of consciousness during cataleptic immobility has been noticed in other cases. Dr. Langdon Down, in 1879, had a patient in the London Hospital who remained in a trance for about four weeks. The doctor says:

I was reading to my class at the bedside one of the numerous letters that I received, entreating me not to have her buried until something which the writers recommended had been done. This special one was from an old gentleman of eighty-four years, who when he was twenty-four was thought to be dead, and whose friends had assembled to follow him to the grave, when he heard the undertaker say, "Would anyone else like to see the corpse before I screw him down?" The undertaker at the same time moved the head a little and struck it against the coffin, on which the supposed dead arose and sat up. On this being read aloud a visible smile passed over the face of my patient, and she returned to obvious consciousness soon after.

It is a remarkable fact that, in presence of the recognized insufficiency of the usual tests for ascertaining

death under doubtful circumstances, that a method said to be infallible by those who have investigated the question (Crimotel, Rosenthal, Onimus), should have hitherto failed to attract the notice of medical experts. I allude to the death-test by means of electrical currents. It has been proved that dead human muscles very speedily lose their property of contracting when submitted to this form of excitation. Hence it seems that we have here a very simple and precise test for determining whether death is real or apparent. Two needles inserted into a muscle, and connected with a small pocket battery, are all that is necessary for the purpose. The subject is certainly one that deserves further consideration.

Catalepsy, though intimately allied with the hysterical neurosis, often occurs in patients who offer no other symptoms of nervous derangement. Emotions are often the exciting cause of an attack in a cataleptic subject. Many curious instances are related by authors.

A little girl, mentioned by Tissot, shocked at her sister having helped herself to a coveted morsel, remained stiff and motionless for an hour, a spoon in her hand, and her arm outstretched towards the dish. A soldier, quarreling with a companion, in a fit of passion seized a bottle to throw at him; cataleptic rigidity fixed him in this attitude, motionless, unconscious, his eyes full of anger and defiance. In another case, a magistrate on the bench, insulted in the middle of his summing up, remained as petrified in an attitude of indignation and threat at his insulter. Again: we read of priests being cataleptized at the altar in the attitude of elevating the sacrament; of a woman falling into that state on entering the room of her husband who had deserted her.

But frequently also the sufferer falls a prey to the attack without any apparent cause, in the middle of some ordinary action of his daily life, and the spectacle offered is not always free from a humorous or comical aspect. Pétetin gives a curious instance of the mechanism of our brain in the processes of thought, as temporarily arrested by an attack of catalepsy.

He was attending a lady subject to fits of an hysterical character. The patient was requesting him to let her have a hot water bottle to her feet, "for," she said, "I feel ——" At this instant a twitch of her arms signaled an attack of so-called catalepsy, in which she remained three

hours. Quite suddenly she opened her eyes and ended her sentence, "—a great cold over the whole body."

Ecstatic manifestations, often of a religious character, are occasionally found combined with catalepsy. A priest could not read the gospel of the Passion without falling into such a state on reaching the words, "Consummatum est," and other similar cases are to be found mentioned in devotional or medical literature. Many of the saintly women in the Roman Catholic hagiology were victims of the disease: St. Catherine of Siena, St. Elizabeth of Hungary, St. Theresa; not to speak of Joan of Arc, Madame Guyon, Marie Alacoque, and many others.

Cataleptic seizures were also a common feature among the victims of the great hystero-epileptic manifestations so common in the middle ages, which we find described as "possessions" in the curious and abundant literature of the subject.

Towards the end of 1609 the inmates of the convent of St. Ursula, at Aix, fell a prey to the fallen spirits. Among them was a young woman, Madeleine de Mandol, who distinguished herself by the intensity and variety of her "demoniacal" manifestations. "One day," writes the inquisitor Michaelis, "during her confession, Madeleine was interrupted by Beelzebub crying aloud, refusing to receive the absolution, which burnt him more than the flames of hell. * * * In the evening, Madeleine, being called to be exorcised, was found asleep and stiff, like a statue, and had to be carried by four people upon the steps of the altar. On another occasion, a priest was about to receive her confession, when Beelzebub made her become rigid like a pillar of brass. After numerous exorcisms, prayers, and punishments inflicted upon the devil, the latter left her," etc., etc.

Among the sickening descriptions of the awful episodes known as the possession of the Ursulines of Loudun, we find a graphic description of cataleptic phenomena:

The devil, enemy of Sister Claire, appeared at the command of her ordinary exorcist, Father Elizee, and rendered her supple and ductile, like a sheet of lead. The exorcist bent her body in various directions—forward, backwards, laterally—so that she almost touched the ground with her head. The demon kept her in the posture in which she had been placed until she was moved again, during which time she only slightly breathed through the nose and was insensible, for the Father pierced a fold of her skin with a pin without drawing blood or producing pain. Again: we read of others who were "remarkable by their pliability. In

their sleep they could be manipulated like a sheet of lead, and preserved the postures imparted to them until moved again." Elsewhere a nun, possessed by the demon Cismond, lay on the ground in a strange trance; her arms and legs could be twisted about as if made of wood; nothing could be extracted from her; the devil keeping her in this condition so as to prevent her confession.

Among the "Convulsionnaires de la St. Medard" (1731), some were observed to remain two or three days pale, motionless, the eyes open, the body insensible and stiff, with no other sign of life except a very weak, almost imperceptible respiration.

Though, as already mentioned, the Latin races appear to offer a much more favorable field for the spread of nerve epidemics, we read that England has not always been free from such manifestations.

"During Wesley's sermons at Bristol," says Dr. John Chapman, in his work "On Christian Revivals, their History and Natural History," "many used to fall as if struck to the heart by the word of God. Men and women by the score were lying on the ground, insensible, like dead bodies. Singular nervous accidents were likewise frequent among the American fanatics known as Shakers or Jumpers, as well as among the Irish revivalists of Ballymena."

As late as 1861, at the village of Morgine, a secluded commune in the Alps of Savoy, there occurred a curious epidemic of hysteria with all the characters of "demoniacal possession." The population of these regions is extremely neurotic and superstitious. In a short time nearly all the female population, excited by the exorcismal practices of the clergy, fell a prey to the disease, and the scenes recalled the worse days of Loudun. But at the beginning, when young girls were chiefly affected, phenomena of ecstasy, catalepsy, and somnambulism prevailed. The government had finally to interfere, and the temporary dispersion and seclusion of the patients speedily restored their mental equilibrium, and the locality has since resumed its habitual tranquillity.

As an instance of trances of a more contemplative, tendency, I shall give a short account of Louise Lateau of whose attacks Dr. Lefebvre has given a good description.

She used to pass into that condition without any warning. Suddenly, during a conversation, or at her sewing machine, she would become as

transfixed, the eyes turned upward to the right. Her expression is then one of deep attention or of distant contemplation. Her physiognomy, like her attitude, often changes, and depicts feelings of joy or of sadness. Sometimes terror is expressed, or she turns slowly, as if watching the progress of an imaginary procession. Sometimes she stands, resting on the tips of her toes, with her hands outstretched as if to fly away. Her lips move, the eyes brighten, and her face is illuminated by an ideal beauty. The stigmata in her forehead and hands bleed. * * * She kneels, falls face forwards to the ground, where she remains for hours in the attitude of crucifixion. Other attitudes are taken during the ecstatic condition, which comes to an end in the midst of alarming symptoms of impending death.

The condition of the patient during her ecstasy was carefully investigated by competent medical authorities. There is no doubt she was conscious, but only of trains of mental imagery of which her diseased brain was the source. Of her bodily condition and surroundings she had no perception. Her muscles presented to a certain degree the waxy plasticity that characterizes true catalepsy. The dilated pupils did not contract to light. She was deaf to the loudest and most unexpected noises made close to her ears; and the skin was almost uniformly insensible to the most energetic and painful excitants. Respiration and circulation were reduced to the lowest possible ebb, especially during the period of prostration. As in ordinary hystero-epileptics, very little trace was left in Louise Lateau during her waking condition of the extraordinary expenditure of nervous energy which had been incurred during certain phases of the ecstasy.

I shall, in conclusion, venture upon a few suggestions as to the explanation of the phenomena of hypnotism and its allied states.

Our cerebral life depends upon the associated activity of innumerable nerve-cells grouped into clusters or centers, each center being more directly related with some sensory or some motor function. Thus there are visual centers, auditory centers, tactile centers, which form the terminal stations of the nerve tracts from the organs of sight, hearing and touch. There are also so-called motor centers, the nervous discharges from which, traveling down to the spinal cord, determine movements of the head, trunk and limbs.

A network of the finest nerve fibrils, of astounding complexity, brings into mutual relationship the individual cells of each center with one another, and with the cells of the other centers. This physical association of our brain elements is the material substratum of the psychical

process of association of ideas which form the groundwork of our mental life. All the higher manifestations of mind are correlatives of the harmonious co-operation of numerous brain elements. Even what appears to be simple states of consciousness are often the result of association, inferential, not presentative states. Hence, any disturbance in the mutual equilibrium of the cerebral centers speedily leads to alterations of those resultants of forces of which perception, thought, will, emotion, are the subjective manifestations.

One of the most striking properties of the nervous system is that by which the activity of one portion may be arrested or prevented—"inhibited"—by the activity of another. To give a familiar instance, the action of the respiratory centers is suddenly inhibited by certain excitations of the sensory nerves, as we have all experienced on receiving the first splash of a cold shower-bath. In the cerebral sphere, inhibition of one tract by another is the mechanism which lies at the root of the higher exercise of our faculties. When we choose, for instance, or will after deliberation, the corresponding state of our nervous organism is one involving more or less complex inhibitions. The sense of moral effort is the subjective equivalent of powerful inhibitions of brain tracts in a state of high tension. The power of attention, of mental concentration, rests likewise upon similar phenomena of arrest. When we attend closely to a sensory impression, or to a train of thought, the excitability of every part of the brain except that actually engaged in the act is diminished by an inhibitory action of the working portion. Again: when we say that anger or fear paralyzes, we allude, in very accurate language to the inhibitory influence which powerful emotion exercises upon the other cerebral functions.

I have said that physiological sleep can be induced by certain monotonous impressions from without. The same may be said of an order of stimuli that has hitherto not received its due share of attention. I mean the afflux

of those confused, mostly unfelt, impressions from the viscera and tissues generally. Under certain conditions—after a meal for instance—these may set up in the cerebral centers to which they converge, an excitation that leads to an inhibition of the higher brain regions, and thereby to a state of general torpor, to sleep.

Similar considerations will assist us in explaining the effect of the usual methods of hypnotization. The stimulation of one of the cerebral sensory centers by repeated gentle and monotonous sounds or touches, or, in the case of the visual organs, by the convergence of the eyes and persistent fixation of a small object, so interferes with the activity of the higher centers, as to lead to various perverted motor and mental manifestations. Certain "nervous" individuals, but above all hysterical subjects, are more amenable to these effects than others. Repetition in all cases increases the liability to hypnotization, and in extreme cases the ideal recall of the processes previously used become sufficient to induce sleep. Finally, there are subjects, such as those of the "Soho Sleeper," in whom, owing to the extreme unstability of their cerebral equilibrium, a kind of spontaneous hypnotization may be observed.

It would be premature, in the actual state of our knowledge, to speculate too closely upon the nature of the changes in the nerve cells upon which the phenomenon of inhibition depends. It has been ingeniously compared to that of the *interference* between two rays of light, or two waves of sound. But this analogy does not account for all the facts; and in connection with this topic we may mention the views recently propounded by Professor Brown-Sequard upon what he calls nervous "dynamogeny." It is a well-known fact that under the influence of various sensorial or emotional stimuli, of moderate intensity or pleasurable quality, our nervous energy, as measured by the muscular effort we are enabled to put forth, is increased to a considerable extent. Recent researches by Dr. Féré have thrown additional light upon these

“dynamogenic” or “force-producing” processes, of which the reviving effect of smelling salts is a familiar illustration. In this instance a diffusive wave invades the whole brain from the olfactory centers, and operates such a change in its constituents as to restore their functions.

It has likewise been shown that every form of mental activity is accompanied with increased nerve power, as directly measured by the squeeze of the hand on the dynamometer. It would thus seem that nervous cell-matter is liable to undergo certain modifications under the influence of certain impressions derived from other nerve regions, in virtue of which it becomes more explosive as it were. But without even attempting to define more closely the “dynamogenic” change, we may perhaps assume it to be the counterpart of what takes place in inhibition, and describe the latter as a nervous process in which a group of nerve cells so acts upon another group as to lower its capacity for work.

Inhibition in one nervous sphere is often accompanied with dynamogeny in another; the neural suspension of cerebral influence for instance, exalts the autonomy of the spinal cord. A good instance of the co-existence of the two processes in the brain is found in “expectant attention,” which depends upon a high tension in the centers involved in the production of the anticipated phenomena, along with a corresponding inertia or depression of the others. The reader will readily perceive how similar considerations may help in elucidating all such phenomena as motor hyper-excitability, ecstasy, suggestion and intensified perception.

The Status Ebrietatis in our Courts.*

By C. H. HUGHES, M. D., of St. Louis.

BY common consent, the inebriate, in relation to his normal environment, like the lunatic, is conceded to be out of harmony. Intoxication extenuates improper conduct in popular judgment, when that conduct is not extremely criminal in its character. So that, while inebriety by common consent modifies the popular verdict, upon conduct at variance with law and propriety in minor degree, actions highly criminal in appearance find no excuse for crime because of the inebriety of their perpetrator. This unequal judgment is made, not because essentially there is nothing in inebriety that modifies and perverts the natural will, but because it is deemed unsafe to society, to concede to inebriety an excuse for crime, or unlawful misdemeanors, and this chiefly because the condition of inebriety may be voluntarily induced, and a state of alcoholic irresponsibility might be assumed and simulated for criminal and other unlawful purposes. But the fact exists and remains that a condition of the brain may be induced by alcohol, both voluntarily and involuntarily, in which the normal brain volition and natural impulses are changed, and at variance with the natural character—a diseased condition of the brain, chiefly and most directly in its circulation, but underlying that in its most minute organization.

There are inebriates who cannot help being such. They are victims of a neuropathic endowment bequeathed by a neurotic and unstable-brained ancestry, who come into the world dowered with a heritage which as certainly

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and fatally leads to inebriety, under slight injudicious indulgence, as in other branches of the same neuropathic family the more palpably seen and undubitably recognized forms of nervous disease, such as epilepsy and mania, are developed from slight causes, which would not in more fortunate individuals have brought into view anything abnormal.

This latent neuropathic heritage which, in the one case determines an inebriate, in the other a lunatic, an epileptic or a paralytic, should be taken account of as an accessory before the fact at least (and in this case contrary to legal precedent), should exempt, in a measure, the victim, whose crime is only possible because of the overpowering influence of this antecedent neuropathic accessory. In this case the accessory is the tyrant-principal.

The law, it is clear, in every case of inebriate misdemeanor, should go behind the police records and look into the neurological history, and discover, if possible, the ancestral and immediate organic factors which may modify or make impossible full responsibility, by fettering or preventing the normal volition. The will cannot be free though it may appear so, *prima facie*, in an individual so tyrannically endowed that he cannot pass a saloon without entering in to take a drink, even though in doing so he violates all the proprieties of life, his own previously-formed resolutions and his highest interests.

There are, undoubtedly, elements of disease in inebriety, as there are elements of crime in it. It should be the duty of the law, instead of regarding its victims always as criminal, when they are arraigned for crime or misdemeanors, to inquire diligently how much is crime and how much disease; how much are the natural character and inclination changed by overpowering and nonpreventable disease, and to what extent might the disease have been averted.

Here the intelligence and self-knowledge of the individual as to his organic make-up, should become a lawful

question, as I believe it should in every question of mental derangement or mental soundness.

A toxhæmic influence, powerful enough to produce indurative changes in the brain, to harden the albumen of the tissues, and produce cerebral sclerosis and peripheral neuritis, as well as the more immediate vasomotor paralysis and consequent vascular disturbances of the brain and other viscera, cannot be, and ought not to be, ignored when the normal functioning of the organ affected by it, whether stomach, liver or brain, is in question. Where immediate psychical aberration does not follow alcoholic toxhæmia, it may follow and is apt to appear in a succeeding generation. The alcoholism of one generation may be, and often is, the insanity or epilepsy of the next, or *vice versa*.

The record of neuropathic decadence due to alcohol, as given by *Morel* and confirmed by all observations since, should convince us without the necessity of further illustrative example here, that the volitional impairment and psychopathic and other neuropathic perversions of alcohol, are of as potent significance and as worthy of judicial consideration as the recognized crime and vice it engenders. Alcohol entails disease of the brain as certainly as it vitiates morals and fosters vice.

It is certainly a very imprudent kind of jurisprudence that takes legal account of the one class of effects, and does not recognize the other.

As I write this note, I have in mind the involuntary criminal record of a young man of otherwise reputable family, who is now serving a life sentence for the automatic alcoholic murder of a dear relation, murdered incidentally and accidentally, and, I believe, as stated by the young man, not consciously, whose home, beginning with the germinal life in his mother's womb, was in a bed of alcohol, whose conception proceeded from and was consummated by a chemically alcoholized father and mother, who became himself a periodical drunkard in early boyhood, and an involuntary matricide at twenty.

The Governor, in view of the extenuating circumstances of this unfortunate young man's birth and hereditary environments, justly, we think, commuted his sentence, for only the Great Omniscient, who knows the frame of such unfortunates, and considereth the unseen elements that so modify responsibility in the organic potency of irrepressible hereditary morbid endowment, could determine the exact extent of this young man's guilt.

The history of the O. Z. family, as detailed by me in the ALIENIST AND NEUROLOGIST, Vol. III., No. 4, is but a sample of a class of cases continually obtruding themselves upon the attention of the neurologist to mould and modify his convictions at variance with the commonly promulgated view of the law, that the inebriate is always responsible for his conduct, and sometimes held as doubly responsible, because both of his intoxication and its sequence. Unlike the law, sound neurology and psychology would inquire into the pre-determining organism, and the responsibility of the criminal for the organic conditions, if any, which may have pre-determined the apparent crime.

PROCEEDINGS

OF THE

NEW ENGLAND PSYCHOLOGICAL SOCIETY.

The New England Psychological Society met at Hotel Brunswick, Boston, Tuesday, October 11th, at 3.30 o'clock, Vice-President Bancroft in the chair.

Present: Drs. J. P. Bancroft, C. T. Bancroft, Ira Russell, George Brown, Stearns, Draper, Twitchel, Goldsmith, Denney, Stedman, Tuttle, Baker, Moulton, Boland, Lane and Fisher—16.

The records were read and approved.

It was voted that hereafter members shall read in alphabetical order or find a substitute.

Dr. E. S. Boland then read a paper on "Idiots Savants." (See page fifty-eight of this number.)

Almanacs were distributed to the members for all the years from 1872 to 1887, and George was questioned by them, giving correct answers instantly to forty-six out of fifty-one questions.

During the progress of the examination he made occasional remarks, such as, "I'm guessing now," "Ask me an easier one," "Aint any such day as February 29," the year not being a leap-year. He said, in answer to questions at one time, "I can figure it out. Sister told me all about it." Also said, "I *see* the answer."

Dr. Fisher suggested that if he fixed thoroughly in mind the names of the first days of the month for any year, he could work backward or forward by adding or taking off days, making a basis for getting his answer quickly. He asked George the first days of each month in 1887, and was answered correctly.

Dr. Boland asked the first days of each month in 1883, rapidly and out of order, and was answered correctly.

DISCUSSION.

Dr. Draper remarked that cases like the one exhibited were interesting and puzzling. Once saw a young man in an almshouse who was imbecile and epileptic, yet he could give the minutes or seconds in a person's age instantly; or the number of feet in a large number of miles. These were his sole accomplishments.

Dr. Denney examined this patient yesterday, and found cataract of right eye, mystagmus, stammering, tenderness of sutures, absence of tendon reflex.

Was struck with the fact that he could not answer questions in the year of his birth, nor in the year he has been at the idiotic school. Thinks perhaps his sister had not included these years in her instructions. Thought it was probably an acquired facility.

The boy is an imbecile and not an idiot. Speech is developed fairly; also senses of smell, touch and taste.

Thinks this boy has hallucinations, as he talks to himself and tells some one to "Go away," when no one is near. Brierre de Beaumont says idiots cannot have hallucinations but imbeciles may. This has a photographic memory, and has devised some method from it by which he gets his facts.

Dr. H. R. Stedman mentioned a case of imbecility in a man of about forty, who has an extraordinary memory and quite a remarkable power of invention. He patented improvements upon the type-writer, and made ingenious mechanical toys which brought him in a little money. He preferred to associate with young children; was amused and interested in childish things; was generally very untidy, and required daily care in all details of cleanliness and dress. Was moody and easily excited to uncontrollable anger. His cranial conformation and his movements instantly suggested the congenital defective.

Dr. Stearns' mention of certain pathological appearances found in cases of typhomania which were suggestive of general paralysis, viz., adhesions of the pia mater and

rusty staining of the internal surface of the dura, were interesting to him as giving some color to a surmise of his own regarding certain cases of acute maniacal exhaustion.

In an experience of several years at the Danvers Hospital Dr. Stedman had noticed that the deaths from this cause were apt to occur in persons whose previous history bore, on close examination, a resemblance to that of general paralytics, but their great excitement and death occurring soon after admission precluded the possibility of satisfactory examination. It had seemed to him highly probable that many deaths, seemingly from typhomania, ordinary maniacal exhaustion and melancholic frenzy might be due to incipient general paralysis, the supporting and other treatment usually successful in cases of ordinary insanity being without avail because of the lack of nervous stamina, so to speak, peculiar to the paretic.

Dr. Moulton thought the boy's talent was due to continuous drilling. Thinks there is an unconscious system of drilling going on at the idiotic school, in the exhibitions he gives to visitors.

Dr. Goldsmith had seen one or two similar cases. One was an idiotic boy of ten, in an asylum near Berlin. He could remember the names of all the horse car conductors on a certain route, and he learned in a day or two the full names of all the boys in the asylum, numbering several hundred. As there is an unconscious memory there may be an unconscious kind of reckoning. The faculty may be instinctive and no more remarkable than the architectural knowledge of a bee.

Dr. Brown said such cases were not infrequent. They were analogous to cases of one-sided genius in sane minds. Has in his care at Barre an idiotic boy who will add three columns of figures or do a complicated example on the blackboard with great rapidity. He is childish in his plays, and has no common sense. Will do the bidding of any person he meets.

Another boy of fifteen has the same ability, can mul-

tiply eleven figures by eight in a moment. He can give the cube root of large numbers with great ease. He has no other protruding faculty, and is insane and has delusions. If this faculty were cultivated he would equal Terah Colburn, but the effort at calculation is very exhaustive. He turns pale and quivers with excitement under the mental strain.

Another boy of thirteen, who wears a No. 8 hat, can remember by once reading, a hundred pages or more of any book.

He has two musical prodigies in his school, who play intricate music at sight and know little else. He thinks disability of the brain in general increases the activity of the remaining sound portion.

Dr. Stearns said he could throw no light on these cases. We must know more of the operations of the sound mind before we can explain them. We may talk of molecular activity, but its relation to thought is beyond our ken. It seems as if defect in certain faculties and excess in others pointed to a certain basis of truth in phrenology. He confirmed Dr. Brown's description of his cases, and related the case of a boy he knew who played the piano well at four years—before he could talk.

Dr. Lane had examined Dr. Boland's patient at the school, where he seemed less embarrassed and made fewer mistakes. There was hypertrophy of memory for one class of events only, and not of the whole faculty. He mentioned a case at the Boston Lunatic Hospital, of an imbecile young man, who remembered all the fire alarm stations. Also of a blind insane man, who remembered the number of visitors each week for a long time. Concentration of attention helps the memory wonderfully.

Dr. Fisher said he was glad to have presented a case of defective mind for a study, as idiocy and imbecility are properly forms of insanity under the newest classification. Schüele and Krafft-Ebing divide mental disease into states of defect and degeneration and cases occurring in the healthy brain. The former class is one of growing

interest and importance, and under it the case in question would belong. He compared the excessive activity of one faculty in the undeveloped mind of an idiot to the excessive sensibility of touch in a person born blind.

Dr. Stearns then read a paper on "Typhomania," of which the following is an abstract:

"Dr. Bell, in 1844, first described this form of fever or mania. In 1850, Dr. Ramsey remarked that it often occurred among emigrants and was an intermediate form between fever and mania proper. Dr. Williams first called it typhomania, though it was also known as Bell's disease. Bell described this new form so fully that subsequent writers have found little to add. The pathological changes however were not described with detail, as cerebral pathology was then in its infancy.

"It was not supposed to be a form of typhoid fever, as none of the characteristic lesions of that disease were present, but rather an acute delirium. Dr. Ramsey thought it was due among emigrants to the long voyage in unwholesome quarters, and disappointment and homesickness common among this class. Dr. Stearns described the disease as seen in his experience, and especially in two recent cases, one of whom died and one recovered. The development is rapid and the prominent symptom is a very active delirium, with hallucinations, principally of sight. The patients seem in terror, and try to escape from flames or the sight of blood, or from their imaginary enemies. There is a constant flow of words without coherence or meaning. There is great restlessness and agitation, and rolling from side to side. The face is pinched, anxious and dusky; pupils are contracted or dilated, the hands and tongue tremble, and sordes cover the latter and the teeth and lips. The throat is full of tenacious mucous; the pulse is rapid and weak, and from 100 to 140. The temperature may be subnormal at first, and does not rise as high usually nor fluctuate regularly as in typhoid fever. There is absolute refusal of food, and often vomiting. In some cases bullæ occur, filled with dark

fluid, and breaking, leave deep ulcers. There may be momentary returns to reason. The crisis is reached in two weeks, and often much sooner. It is usually fatal. When recovery occurs the persistent wakefulness yields, the appetite returns in a measure, and convalescence is rapid. Death occurs from coma and exhaustion.

"The pathological condition of the brain is generally one of capillary congestion. The membranes are dark with venous blood, and in some cases the pia is adherent to the convolutions, as in general paralysis. The gray substance is pink or red, and sometimes the white substance is pink also. There may be œdema of pia.

"These cases are to be diagnosticated from mania, (1) by their suddenness of onset and lack of the usual prodroma of mania, (2) appetite is normal in mania and absent in typhomania, (3) in mania the rate of progress to recovery or dementia is very much slower, (4) mania is seldom fatal, (5) there are no delusions, but rather delirium in typhomania. It may resemble typhoid fever with early delirium, but the abdominal signs of typhoid are wanting. It does not have the local spasms and high temperature of meningitis.

"The indications are to procure sleep, though this is impossible in early stage with safe doses of hypnotics. Hydrobromate of hyosine is of use to allay motor activity. Seclusion in quiet room. Food often, and in small quantities, and nutrient enemata. Wine and prolonged baths are indicated. The prognosis is bad, as it is a most formidable disease, though recovery seems to be more common in this country than in Europe."

Dr. Stedman was struck with the fact stated by Dr. Stearns, that the lesions in some cases of typhomania resembled those in general paralysis. In some fatal cases resembling typhomania he had found there had been a history of general paralysis. He thought it would be interesting to learn the subsequent history of cases which recovered with reference to this point.

Dr. Moulton said he had had better success in inducing

sleep in typhomania with the wet pack than any other means.

Dr. Goldsmith remarked that little is said about typhomania now in the books. Acute delirious mania includes more and its description is different. Once had a typical case of Bell's disease, but have seen few cases since. There seemed to be a constitutional poison powerfully affecting the nervous system. Temperature was not very high in most cases, but in one case that recovered it was as high as 106° . There is often a return of reason for a few minutes. Diagnosis between Bell's disease and acute delirious mania and typhoid fever is difficult. Some cases resemble meningitis.

Dr. Draper had noticed two prominent symptoms—great aversion to food and great restlessness. Patients would roll out of bed and about the floor regardless of consequences. Had inquired in England how to manage such cases and was told they had no such extreme cases of mania. Was told all maniacal excitement was transient, seldom lasting more than three or four days. If it lasted more than ten days patient would die.

Dr. Fisher remembered a typical case of Bell's disease which died in two days. Had seen fewer typical cases of late years. Regarded the description of Dr. Stearns as accurate; but such cases are more apt to be called acute febrile delirium, or acute delirious mania now.

Dr. Bancroft had seen a few cases of Bell's disease. They all had the peculiarity of suddenness of onset. There seemed to be an ictus or blow profoundly affecting the nervous system, such as we get in fatal fevers. The delirium was marked by its mechanical and automatic character. There was the rapid repetition of the phrases over and over, like the running of a mill.

Dr. Goldsmith noted the fact that the appetite returned and patients ate voraciously just before death.

Dr. Stearns said authors speak of recoveries as not very infrequent. Dr. Yellowlees told him he had seen many cases, and some recovered. Adjourned at 10 o'clock P. M.

SELECTIONS.

NEUROTHERAPY.

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF HYDROPHOBIA.—Dr. D. R. Brower, in an interesting paper read before the Chicago Medical Society, on this subject, makes the following points:

The poison of hydrophobia begins its activities, so far as the nervous system is concerned, in the medulla oblongata, and that of tetanus in the same structure, the one selecting the nucleus of the *pneumogastric* and the other that of the *trifacial*. It is not unreasonable, therefore, that they should closely resemble each other in their earlier history.

The following table, modified from Poland, shows the important points of differentiation between tetanus and hydrophobia:

<i>Tetanus.</i>	<i>Hydrophobia.</i>
Period of incubation short.	Period of incubation long.
Five to ten days.	One month to two years.
Spasms tonic.	Spasms clonic.
Trismus.	Jaw relaxed, opening and shutting readily.
Countenance tetanic. Drawing up of the nose, wrinkling of the forehead. Risus sardonicus.	Countenance hydrophobic. An expression of excitement, fearful distress and peculiar restlessness.
No great thirst, and in general no great aversion to fluid administered in small quantities; rarely ever any discharge of saliva.	Thirst and aversion to fluid. Even the sight and noise of fluid excites a paroxysm; frequent and viscid discharge of saliva.
Vomiting rare.	Vomiting general.
Mind generally clear to last.	Mind much disturbed, easily excited into violent rage; hallucinations; intense fear; delirium.

The differentiation of hysteria is based upon the following:

In hysteria the paroxysm will follow immediately upon the bite, within a day or two.

The hysteric patient is loud in expressions of apprehensions, while in hydrophobia there is no such demonstration.

A few days' delay will make the diagnosis certain, because hydrophobia is usually fatal in four days.

In hydrophobia, as the end approaches, there is a rise of temperature, speedily rising to 105° at least.

In hysteria there must be found the other evidences of the condition, such as the history of previous attacks—the hysterical, left side anesthesia, ovarian tenderness, epigastric tenderness, mammary tenderness, facial anesthesia and blinking of the upper eyelids.

Treatment.—After every effort to destroy the virus, quinine and alcohol are remedies that, in his judgment, hold out the greatest amount of hope; they are germ-destroying agents with which the body can be surcharged without danger; and they promote processes of general nutrition; they are the agents that in his experience give the best results in tetanus. Antipyrin is a remedy worth considering in this disease; the surprising effects it has on the medulla oblongata would lead us to hope it may benefit this and other diseases that start in disturbed nutrition of the important part of the nervous system.

TREPHINING A SOUND SKULL AND CUTTING OUT A PIECE OF THE DURA MATER FOR EPILEPSY RECOVERY.—Dr. Hughes Bennett and Mr. Pearce Gould (*Brit. Med. Journal*, Jan. 1st, 1887) report a case of epilepsy of six years' duration completely cured by surgical operation. The case is as follows: W. A., aged 36, married; six years before, received a violent blow on right side of head. He was stunned at the time, was taken to hospital, and treated for a scalp wound. He regained consciousness after a few hours, and the wound healed perfectly in a few days. Six weeks later he was seized with a convulsive attack, in which he lost consciousness, and it was observed that the movements of the limbs were confined to the left side. He had a similar attack a fortnight later, and these have continued at irregular intervals ever since, averaging one a week. His general health continued good, but after most of his attacks he was seized with violent mania which rendered him dangerous, so much so that he was confined in an insane asylum for three years. In May, 1886, he was admitted into hospital under Dr. Bennett. He was a tall, delicate looking man, with all organs and functions of body normal and intelligence unimpaired. Over the right parietal bone was a transverse cicatrix in the scalp. This was movable, and no abnormality could be detected in the

bone beneath, and there was no tenderness to touch. No trace of paralysis or loss of sensation. Special senses normal. The exact site of center of scar was $3\frac{1}{2}$ inches from the longitudinal fissure in a line drawn vertically $2\frac{3}{4}$ inches behind the external meatus of the ear. During the two months patient was under observation in hospital he had weekly epileptic attacks, most marked on left side, preceded by irritability of temper. These attacks lasted five to ten minutes, after which he was very violent for half an hour and then fell asleep, and awoke in a few hours with headache. Next day he was in his usual condition. Immediately prior to attack he saw a bright red light in front of his eyes. Dr. Bennett advised trephining over the seat of the original injury, in the hope of finding a depressed fracture or some other local or removable injury to the underlying cortex cerebri. On July 8th Mr. A. Pearce Gould made a large trephine opening at the seat of the cicatrix. The portion of bone removed was perfectly normal, and so was the dura mater underneath; a circular portion of this, was excised, when the exposed cortex was seen to be apparently healthy. The brain was then explored in four different directions for about one inch in depth; nothing abnormal was detected. The wound was then closed and the man recovered, and five months after had had no attack. The operation was performed with the usual antiseptic precautions, the scalp being well washed and rendered aseptic previous to the operation. The wound was united with gut sutures and a drainage-tube used. Morphine (as recommended by Mr. Horsley) was injected before the anæsthetic was administered. The strange part of this case is that nothing apparently abnormal was found in the brain or its coverings, and yet the patient was relieved by the operation. His convalescence was uninterrupted and the wound healed soundly, there being not the least tendency to hernia cerebri.

[Nothing is said of the after treatment in this case. He probably received more efficient and successfully repressive treatment after the operation. The operation or the chloroform may have interrupted the habit, but the most remarkable feature is the loss of the dura mater, and no convulsions after it, when they had been so frequent before. —*Editor.*]

SALOL IN RHEUMATISM.—*Medical Press*, Feb. 29.—Salol is a salicylate of phenic ether, resembling fat in its behavior

in the system, being decomposed by the pancreatic ferments into a free acid and an alcohol-salicylic acid and phenol. It appears as a colorless crystalline body with a slight aromatic odor, is almost tasteless, and practically insoluble in water. It contains 40 per cent. of phenol and 60 per cent. of salicylic acid. It never produces nausea, like salicylate of sodium, and is more readily taken. Sahli treated nearly all the cases of articular rheumatism in the polyclinic with it, in daily amounts of six to eight grammes (3iss to 3ii), in doses of two grammes (3ss) each. It was always well borne. A strong salicylic acid reaction was found in the urine two hours after the first dose. There was no fear of carbolic urine appearing after the doses given. No doubt the antipyretic action was due mainly to the phenol. Singing in the ears was not always avoided, nor were endocarditic complications always prevented. In addition to the good effects in acute and chronic articular rheumatism, a prompt action was observed in several cases of neuralgia, in which salicin had proved inert, and also in erythema nodosum, erythema multiforme, urticaria and peliosis. Herrlich had used it in twenty five cases of acute articular rheumatism, in a series of cases of chronic rheumatism, and in some cases of muscular rheumatism, lumbago, etc. It showed itself of decided benefit in the acute form. He could not say what part the carbolic acid played; in any case the action was so rapid and striking that large doses of salicylic acid did not correspond to it, so that it might be assumed that the carbolic acid played a part in the rapid improvement. Relapses and endocarditic complications were uninfluenced by it. Salol may also be used externally as a disinfectant.

ANTIPIRYN AS AN ANODINE.—At a recent session of the Academy of Sciences, M. Germain See read a memoir upon the antagonism of antipyrin to pain. The hypothermic property of this medicament presents new interest secondary to that of the remarkable influence it exerts upon the element of pain. In paroxysms of acute or chronic gout, in the attacks of mild form of rheumatism, the pain disappears rapidly under the influence of sixty or ninety grains of antipyrin given every day of a week. But it is in nervous troubles, especially in which disturbances of sensibility occur, that antipyrin produces its most marked effects. Facial neuralgia and migraines yield readily under its influence. The darting pains which mark the initial stage of locomotor ataxia

are calmed by antipyrin not less than by acetanilide. The former substance has over the latter the advantage of being managed more easily and of being less dangerous. The agonizing pains of heart disease, such as troubles of the aorta and the cardiac arteries, yield under the influence of sixty to ninety grains of antipyrin. This valuable medicine ought always to be administered in doses of fifteen grains, at intervals of from one to three hours, in half a glass of ice-water. The most serious inconvenience in its employment consists in an eruption like that of scarlet fever, but which readily disappears.

Experiments made by M. Gley upon animals show that antipyrin produces a veritable antagonism in the member into which it has been injected. It appears to act on the nerve terminations. However that may be, antipyrin is a most efficacious and harmless remedy for pain.—*The American Practitioner and News.*

ACTION OF CAFFEINE AND THEINE.—Leven, in 1868, showed that theine produced convulsions in frogs, while caffeine did not; and that the lethal dose of theine was larger than that of caffeine. This is confirmed by the experiments on frogs, made by Dr. Thos. J. Mays, from which the following conclusions are drawn:

Theine and caffeine agree in the following—

1. They first affect the anterior extremities.
2. They diminish respiration.
3. They produce hyperæsthesia during the latter stage of the poisoning process.

They differ in the following—

1. Theine principally influences sensation, while caffeine does not.
2. Theine produces spontaneous spasms and convulsions, while caffeine does not.
3. Theine impairs the nasal reflex early in the poisoning process, while caffeine does not, if at all, until in the very last stage.
4. The lethal dose of theine is larger than that of caffeine.—*Therapeutic Gazette.*

ACONITINE AND QUINIA HYDROBROMATE IN NEURALGIA—Crystallized aconitine, when properly used, is one of the most powerful remedies in certain kinds of neuralgia. It is most valuable in so-called “essential” neuralgia, especially facial and trigeminal neuralgia. It is best given

in the form of granules containing a quarter of a milligram of crystallized aconotine, or crystallized nitrate of aconotine, the dose being the same. An interval of four hours should be allowed between the doses, the total quantity of the drug administered in the twenty-four hours not exceeding one milligram. There are forms of obstinate facial neuralgia, however, such as the intermittent variety, which resist the action of aconotine alone, and these likewise prove refractory to quinine alone. In such cases, success may be achieved by combining the two drugs. This may be done in pills, as follows: Hydrobromate of quinine, 10 centigrams, crystallized aconotine, $\frac{1}{4}$ milligram. One pill containing the above quantity of quinine and aconotine to be taken every four or five hours.—*American Practitioner and News*.

THE IMMEDIATE CURE OF WHOOPING-COUGH.—Dr. Mohn, of Christiana, communicates to his Norwegian *confrères* a new method of treatment for whooping-cough, for which he claims remarkable results, the disease being cured in a single night. His plan consists simply in the thorough disinfection, by means of burning sulphur, of the rooms, clothing, etc., used by the affected children. The children are taken out of the room, the bedding, furniture, and playthings are exposed, and two ounces of sulphur are burned for every 100 cubic feet of space in the room. After the room has been thus exposed to the sulphurous acid fumes the affected children are allowed to return and occupy it. As a result of this treatment it is claimed that attacks of coughing are immediately alleviated, and often entirely disappear.—*Revue des Sc. Med.*

“COCA” AS A CARDIAC TONIC.—N. Y. *Medical Record*, of February 26, 1887, quotes Beverly Robinson, M. D.: “On several occasions, when digitalis has proved to be useless or injurious, I have had very excellent results from caffeine or convallaria. Certainly, the later drug is more easily tolerated by a sensitive stomach than digitalis is; and whenever the nervous supply of the heart is especially implicated, I believe that I secure more quieting effects from its employment. Among well known cardiac tonics and stimulants for obtaining temporary good effects, at least, I know of no drug quite equal to Coca. Given in the form of wine or fluid extract, it does much, at times, to

restore the heart-muscle to its former tone. I have obtained the best effects from the use of Mariani's Wine."

DUJARDIN-BEAUMETZ' TREATMENT OF CEREBRAL ANÆMIA.—After each meal a teaspoonful of syrup of iodide of iron taken in seltzer water. On retiring, a teaspoonful of this mixture:

Potass. bromid.

Sodii bromid.

Ammonii bromid. - - - - - āā gr. xx.

Aquæ distill. - - - - - ʒj.

Two sulphur baths should be taken weekly. When the temperature of the external air will permit cold douches should be substituted for the sulphur baths, followed by hot foot baths.—*Revue de Therapeutique*.

SWEET SPIRITS OF NITER INCOMPATIBLE WITH ANTIPYRINE.—Dr. Eccles (New York *Medical Journal*, October 24th, 1885), while making pharmaceutical investigations he had occasion to mix some sweet spirits of niter with a solution of antipyrine. At first the mixture was clear and colorless, but after some hours of standing became green. The optical appearances of this fluid were identical with those of the anilines, and as antipyrine was a coal-tar product, he supposed the change was due to the formation of a green aniline, and so it had proved to be.

FORMULÆ FOR BROMIDE OF NICKEL IN EPILEPSY.—Da Costa recommends the following formulæ in cases of epilepsy: *Pills*—Bromide of nickel, 60 centigrammes; powdered marshmallow, 40 centigrammes; extract of gentian, 40 centigrammes. For twelve pills. *Syrup*—Bromide of nickel, 10 grammes; water, 120 grammes; glycerine, 15 grammes; sugar, 250 grammes. Bromide of nickel is prepared by saturating carbonate of nickel with hydrobromic acid, filtering and evaporating to dryness in a water bath.—*Med. and Surg. Rep.*

THE PROPER USE OF ANTIPYRINE.—Pavey's rules: If temperature does not exceed 103° F., divide thirty-one grains into three powders and give one powder every half-hour. If thermometer registers 104°, three doses as before, of fifteen and one-half grains each; for temperature of 105° and above, sixty-two grains in four doses,

half an hour apart. If stomach will not retain drug, give by rectum, in thirty to forty-five grain doses, or hypodermically in a fifty per cent. solution.

A NEW HYPNOTIC.—Mering announced before the Strasburg Meeting of Neurologists the discovery of a new hypnotic, viz., hydrate of amylen, which represents a tertiary amylic alcohol. The drug has a specific gravity of 0.8, is little soluble in water, but readily so in alcohol. Mering tested the hypnotic power of the new remedy in sixty different cases, giving it altogether 250 times in paralysis, mental affections, insomnia caused by nervous excitation, and some cases of infectious fevers. The dose of hydrate of amylen is from 45 to 75 grains. The sleep induced by it lasts six to eight hours. The drug has a more pleasant taste than paraldehyde, and produces no after-effects. A convenient form of its administration is the following mixture:

R Amylen hydrat-	-	-	-	-	grs. lx.
Aq. dist.	-	-	-	-	f 3 j.
Extr. glycyrrh.	-	-	-	-	f 3 j.

S. Shake well before taking.

—*Munchener Med. Wochenschrift.*

COMMON SALT IN MIGRAINE.—Dr. Rabow, of Berlin, finds that half a teaspoonful or more of common salt, taken as soon as the premonitory symptoms of an attack of migraine begin to show themselves, will frequently cut it short in about half an hour. Similar treatment has also proved of service in epilepsy, as was remarked some years ago by Nothnagel; the explanation being probably in both cases that a violent reflex action is set up.—*Med. and Surg. Rep.*

AGARICIN AS A REMEDY IN NIGHT SWEATS.—The most profuse sweats, especially those of phthisis, are checked almost as if by magic, with a single dose. It operates by diminishing thirst and increasing the secretions of urine. The dose may be pushed to the extent of one grain in the course of twenty-four hours. The single dose for an adult is from one-eighth to one-fourth of a grain.—*N. C. Med. Jour.*

SALOL IN SCIATICA.—Dr. v. Aschenbach, of Corfu (*Fortschritt der Med.*), suffering from sciatica, in the even-

ing he took half a gramme, and at midnight one gramme of salol, after which he fell asleep, and remained perfectly free from his pains.

NEW REMEDIES FOR THE MORPHINE HABIT.—Dr. Oscar Jennings (*The Lancet*) relieves organic distress and cerebral craving of the opium habit by *sparteine* and *glonoin*, until the system has accommodated itself to the absence of the morphine.

STRAMONIUM IN EPILEPSY.—Fifteen drops of the tincture may be given alone three times a day for some days. Especially valuable after a long bromide treatment.—*N. C. Med. Jour.*

CLINICAL NEUROLOGY.

THE EARLY SIGNS OF LOCOMOTOR ATAXY.—Dr. Max Karger (*Lancet*, August 20, 1887) has published, as a graduation dissertation, in the University of Berlin, an account of a number of observations made on one hundred and seventeen cases of locomotor ataxy in Professor Mendel's clinic, with a view of detecting the early symptoms of this disease; for, as he says, the great hope of a really rational, intelligent method of treatment lies in the recognition of the existence of the disease in the earliest stages. The history given by the patients established a connection between syphilis and locomotor ataxy in fifty-three per cent. of the cases. In the earlier stages he found symptoms affecting sensation, lancinating pains, numbness, especially of the lower extremities, cord-like sensation round the waist, retardation of the rate of conduction of sensations, and what he looks upon as especially important, being almost always, present, the so-called Romberg's symptom, *i. e.*, the inability or great difficulty of balancing the body when the feet are placed parallel and close together, the eyes being shut,—which, however, he does not consider is due to the ataxy, but thinks it is an abnormal condition of sensation. With regard to ophthalmic symptoms, he finds that at the commencement of locomotor ataxy there is a diminution in the acuteness of vision and a concentric contraction of the field, amblyopia and amaurosis, which were due in thirty-five per cent.

of the cases to atrophy of the optic nerve. Then there was slight and transitory paralysis of the eye-muscles. Insensibility of the pupil to light was found in sixty-six per cent. of the cases, and was due sometimes to a paralyzed condition of the sphincter and sometimes to disturbances of reflex action. With reference to the patellar reflex, the author thinks it has been considered to be absent rather too universally. He found it in eight of his one hundred and seventeen cases. The bladder reflex was often diminished, so that chronic vesicle disease, the cause of which ought to be made out, ought to lead a medical man to think of tabes. Impotence was much more common than any increased sexual reflex. Very rarely gastric and cephalic "crises" and joint affections were noted. The author suggests that complaints of a vague nature, such as nervous pains, eye or bladder troubles, should lead the physician to make a thorough examination with special reference to the want of patellar reflex, Romberg's symptoms and the want of reaction of the pupil, as these objective signs do not necessarily give rise to any subjective symptoms.

GERLIER ON AN EPIDEMIC OF PARALYTIC VERTIGO, A NEW MOTOR NEUROSIS.—The *Lyon Méd.*, February 6, 1887, gives this account by Gerlier of a new form of vertiginous and paralytic neurosis:

"This vertigo is intermittent, and comes on in spells. A sudden pain starts in the nucha and radiates to the back: the sight becomes dimmed, the eyelids fall over the eyes, the strength fails, the legs flex, and the patient feels as if *very* drunk. The patient is generally at his occupation or in the street when stricken, and the attack is characterized by the the three symptoms, muscular weakness, cervical pain, and ocular disturbance.

"The paresis involves the extensors of the head, the levators of the eyelids, the extensors of the legs, and sometimes the depressors of the lower jaw and the extensors of the lower jaw. The pain in the nucha is never absent, and is a sort of sudden torticollis.

"The ocular symptoms are limited to an amblyopia with a ptosis so complete that the patient must lift the lid to see where to walk.

"The attack only lasts from five to ten minutes, is brought on by fatigue, and in the interval between attacks the health is perfect. Attacks never occur at night. The

muscular groups involved are those which execute the rythmical movements of certain employments. The disease is seen only in summer. In the first stage of the disease the patient has daily attacks coming on after midday, and after more or less muscular exertion. In the second stage many attacks occur daily, some in the morning, and all after or during some physical exertion. Rest in bed stops the attacks entirely. Towards the fall attacks become less numerous, and disappear altogether in November.

"The disease is confined to farmers of Gex, in the Franco-Swiss frontier. Forty cases have so far been studied, all but one (so far) men.

"As to the cause of this malady the author can say little. It originated in 1885, and followed exactly the progress of a mildew.

As treatment, the author recommends more moderate work and protection of the neck from the sun. Cold baths have helped some cases. Quinine did no good; iodide of potash seemed to have a certain efficacy.

MENTAL AFFECTIONS ASSOCIATED WITH CHRONIC BRIGHT'S DISEASE.—"It is well known that certain mental phenomena occur in connection with chronic renal diseases besides simple uræmic coma. I have reported one case of violent mania in a man aged forty-two years, the subject of Bright's disease. When brought to the hospital, he had been maniacal for three or four days. He subsequently became comatose and died.

"A very interesting case was recently under my care in the University Hospital. A man was brought to the hospital Thursday evening. I saw him on Saturday. He was then quiet, in a semi-dozing condition, but could be aroused, and gave a very interesting account of himself. The whole clinical picture was that of chronic interstitial nephritis. I thought it not improbable that the man might pass into a condition of coma. There was nothing to attract special attention to his mental condition, and I did not regard his condition as critical. That night he got out of bed, in the absence of the attendant, wandered about the ward, and finally jumped out of the window. It was subsequently learned that, before admission to the hospital, he had been violent, requiring two or three men to hold him. We were not told this when he was brought to the hospital. I have no doubt that this was an instance of mental disturbance due to chronic nephritis. I was told

by one of the physicians who had attended him that the man was full of delusions. He thought that his wife and others were persecuting him.

"I saw another interesting case a year ago last Christmas. This occurred in the practice of Dr. Mullin, of Hamilton, Canada. Here a medico-legal question arose. It was, whether or not the man was in a condition to make a will. There was no doubt as to the existence of chronic Bright's disease. The mental condition was peculiar. He believed that his wife and others had designs upon his life, and it was with difficulty that he could be persuaded to take food. He thought that people were persecuting him. Although he gave a very intelligent account of himself, it was not considered advisable that he should make his will at that time. He was placed upon a somewhat more active treatment than he had previously received. This man subsequently did well, his mind had cleared, and he recovered sufficiently to get about and to make his will."—Dr. Wm. Osler (*Polyclinic*), Philadelphia Neurological Society.

A POINT CONCERNING POST-DIPHTHERITIC OCULAR PARALYSIS.—"Doctor, I just want you to see and tell me that there is nothing the matter with this lazy boy's eyes. He does not want to go to school, and says he cannot see. I have punished him, but he is so obstinate, he will not read nor write. Now I just want you to tell him, that there is nothing the matter with his eyes and he has got to go to school!"

Such poor little fellows are from time to time brought to an oculist's with just such an explanation from the parents, and often they add, that their family physician was of the same opinion.

"Then the boy has been sick?" is the question.

"Yes, his sister had the true diphtheria, and was very sick, but he had only a little sore throat. She is all right again; but this lazy good for-nothing has hardly been sick."

Not to string this out too long, the little fellow is found to suffer from paralysis of the accommodative apparatus and absolutely unable to read or write, and has had all his punishment for nothing. In another case perhaps, the parents bring the little patient, on account of his squinting. He has been making faces, and now his eyes are crossed, and he will not keep them straight in spite of all they say or do, is their report.

To this class of little patients the oculist must appear as a savior. The pity is only that they have to suffer, aside from their very uncomfortable affection, also from the ignorance of the parents.

A little teaching might prevent this. If the family physician would tell the parents, that there may be an ocular paralysis developed in from one to four weeks after the attack of diphtheria, they would be prepared and the little ones would be spared much ill-treatment. But the physician must go further. In our suppositious case, the little sufferer's original ailment had been considered to be no more than a simple sore throat; yet, the paralysis following, almost proves this little sore throat to have been diphtheritic in character. The physician, therefore, should not exclude from his remark, the children who have apparently been suffering from a mild throat-trouble, while others in the same family have had "true diphtheria." The frequency of just such experiences as those here related, is astonishing, and if these few remarks help to make some little sufferer's hardship lighter, my wish has been fulfilled.—ADOLPH ALT, in *Weekly Medical Review*.

HÆMOPHILIA.—Dr. F. C. Shattuck gives to the Suffolk District Medical Society, April 31st, the following interesting clinical record:

H., a clergyman, æt. 52, entered the hospital, July 12, 1886, for tonsillar abscess, of which he had had several previous attacks. The first was treated by incision, which was followed by hæmorrhage that did not finally cease until six weeks had elapsed. In a day or two after entrance the abscess broke, and the day after this he began to pass bloody and smoky urine, the source of which the microscope showed to be the kidneys. He reported that hæmaturia had followed each previous attack of parenchymatous tonsillitis, and was also brought on by unusual mental excitement or exertion. In all, he thought he had had as many as 150 attacks. If he kept quiet, and drank large quantities of water, the bleeding generally ceased in five or six days, but if he worked it lasted from twenty to thirty. When a child, slight knocks produced large, black-and-blue, painful swellings, which were slow to subside. When 21 years of age he had an epistaxis which threatened life, but bleeding from this source has never recurred. The tendency to bleed has, he thinks, diminished as he has grown older, but slight cuts are still followed

by free and persistent hemorrhage. No history of hæmophilia in either parent or grandparent could be obtained ; all were long-lived. Of his seven brothers and sisters, one brother shows this tendency, and a sister's son exhibited the hemorrhagic diathesis to a marked degree, finally dying of persistent hæmaturia. This patient is an unusually intelligent man, but he cannot trace the diathesis beyond his own generation.

AS A RADICAL CURE FOR EPILEPSY.—Dr. H. Bonnewyn, of Brussels, applies the actual cautery deep in the calves of the legs with a hot iron, raised to white heat, and during the epileptic fit. The author admits that the remedy is most painful, but asserts that it is the only one capable of effecting a permanent cure. The pain caused by the burn is more apparent than real, at least during the operation, as epileptic patients are completely and absolutely insensible during the attacks. When, however, consciousness has returned, they feel the pain most intensely. In the treatment of children and youths, the author recommends the employment of milder measures before having recourse to such a severe remedy. He would begin by administering a strong vermifuge treatment for four consecutive days. Strict supervision should be exercised over the mode of life of the patient. He should be strictly forbidden to smoke. Should the fits return, two extemporaneous ammoniacal blisters should be applied to the calves of the legs during the attack. When the blister has formed, which is effected in thirty seconds, it should be kept open with an irritating ointment for fifteen days or more. Should this be found insufficient, the two raw surfaces should be deeply cauterized with caustic potash, always during the attack. If, after this cauterization, which is already rather severe, another attack comes on, recourse must be had, in order to obtain a certain and durable cure, to the decisive means, that is to say, to the hot iron raised to white heat and applied deeply to one of the calves of the legs during the attack.

APOMORPHINE IN THE TREATMENT OF EPILEPSY.—Dr. Vallender has had best effects with apomorphine, administered in the form of hypodermic injections, with the following solution: hydrochlorate of apomorphine, 1 gramme; distilled water, 10 grammes. Half or three-quarters of a Pravaz's syringe is administered, at which dose the emetic

effect is naturally produced. According to the author, apomorphine arrests the epileptic fits in virtue of the action which this substance exercises on the medulla oblongata (*Am. Prac. and News*).

NEGATIVE RESULTS WITH CURARE IN EPILEPSIA.—In this connection the *Am. Practitioner and News* notes that MM. Bourneville and Bricon have employed curare in the treatment of epilepsy, only to condemn it. Following are their conclusions:

“The results that we have obtained are very different from those which have been registered by certain authors. Of thirty-three patients affected by the most varied forms of epilepsy, some being adults, others children, who were submitted to the subcutaneous injection of curare during three and six months, and even more, we found only one who had derived some serious benefit from the treatment, another was slightly improved, while in a third, the fits were diminished in strength but not in number. To sum up—we do not think that curare ought to be maintained on the list of useful medicaments in the treatment of epilepsy.”

KNEE-JERK AS A POINT OF DIFFERENTIAL DIAGNOSIS BETWEEN TYPHOID FEVER AND MENINGITIS.—The experience of Dr. Angel Money confirms the statement of Hughlings-Jackson, made recently with reference to the value of this differential symptom. He has tested it in twenty-five cases, and never observed the knee-jerk to be absent in typhoid, except on the day or two preceding death in fatal cases. Although it occasionally happens that it persists in tubercular meningitis, this is exceptional. Sometimes, in this disease, the knee-jerk varies from day to day, now being present, now absent. It is a more valuable symptom than enlargement of the spleen, and is practically never lost as a result of simple pyrexia.—*Archives of Pediatrics*, September, 1887.

DEYFUS ON PATELLAR TENDON REFLEX IN GLYCOSURIA (*Revue de Médecine*).—According to this author the abolition of the patella tendon reflex of diabetes, may, in simple glycosuria, be replaced by an exaggeration of this reflex action. He considers diabetes a depressing affection of the spinal cord; and where the tendon reflexes are found to be exaggerated in a patient suffering from glycosuria, it may be affirmed with certainty that he is not affected with diabetes, but simple glycosuria only.

OCULAR SYMPTOMS OF EPILEPSY.—The examination of a thousand cases of epilepsy by Dr. Gowers revealed but one morbid condition of frequent occurrence in the ocular fundus, and that was an unnatural equality of the size of the arteries and veins of the retina. Dr. Charles Oliver, of Philadelphia, has frequently observed a reduction of the visual fields for form and color, a granular condition of the choroid in the macular region, a dirty red-gray degeneration of the optic nerve, and a thickening of the fibrous tissue of the retina.—*Lancet*.

MELANCHOLIA AFTER URETHROTOMY.—The New York *Medical Record* extracts from the Kurz reports, in *Memorabilien* of August 5, 1887, two cases in which internal urethrotomy was followed by temporary melancholia. The operation was performed without accident, and resulted in a cure of the stricture in each instance.

NEUROPHYSIOLOGY.

ACTION OF PYRIDINE ON THE FUNCTION OF RESPIRATION.—The *Journal* of the American Medical Association thus discusses the physiological action of this new drug:

"In health and in disease, says Silvia (phthisis, pleurisy, chlorosis, etc.), inhalations of pyridine have the effect of diminishing the quantity of air respired in a fixed period of time; sometimes even by 2,000 centimeters, according to the time the inhalation is given. Notwithstanding this, the feeling of need of air diminishes. The respiratory curve shows that in the healthy man pyridine produces at first an expiratory dyspnœa; the respiration then becomes less frequent, irregular, preventing true periods and sometimes long intervals of apnœa. After the inhalation the respiration remains less frequent and less full, with deep inspirations. Sometimes sleep intervenes, and the periodic respiration is then more evident. The inhalation always causes abundant salivation, preceded by a bitter taste in the mouth and roughness of the throat, with constant desire to spit: the nose also runs. The respiratory curves obtained by exciting the nostrils by the faradic current are very similar to those obtained by pyridine. The nose runs, there is salivation, expiratory arrest, the respiration

is disturbed and becomes sometimes periodic, and lastly, after the excitement has ceased, there are occasional deep inspirations, and those periods of apnœa as seen after the inhalation of pyridine. But sleep and the sense of less need of air are wanting. The author therefore believes that pyridine acts on the respiratory center by means of the trigeminus chiefly, but that the pneumo-gastric also is affected. The influence of pyridine on the pneumo-gastric is also shown by the increased secretion from the bronchial tubes. Pyridine therefore produces irritation of the terminal nasal fibers of the trigeminus and hence running of the nose, salivation, and expiratory dyspnœa. The action on the bulb by means of this nerve is evident, and the respiratory center is first stimulated and then paralyzed. This is shown by the diminution of the quantity of the air respired, and by the respiration becoming periodic and superficial. But the action of pyridine is not limited to the respiratory center in the bulb, but also extends to the higher center of the cortex. Its influence would not have to extend so far beyond the bulb as the cortex to indirectly bring about sleep in this way, since it produces sleep; and this again contributes to give a periodic type to the respiration and to diminish the quantity of air respired in a given time; or perhaps, instead of acting directly on the cortex to induce sleep, it brings about sleep through influence over the cerebral vasomotor centers of the cord, producing a vascular condition within the brain which more readily permits sleep to take place."

MUSCULAR PERCUSSION REFLEX; LOCO-TETANUS.—When the chest wall is subjected to a tolerably smart blow with the finger or percussion hammer, an elliptical elevation of the surface may frequently be observed for a few moments after the blow. This fact has been remarked by Mr. L. Tait, Dr. James Ross and others. Dr. V. V. Philipovich, of Odessa, has investigated the conditions under which the phenomenon is produced showing that it may be made available like other reflexes for diagnostic and clinical purposes. In his observations he made use of a percussion hammer, furnished with a spring and an index, by means of which the force of each blow was registered. The pectoral regions of 100 presumably healthy young men were examined. The lowest force required to produce the phenomenon, which Dr. Philipovich proposes to style "loco-tetanus," instead of "idio-muscular contraction," the term

used by Dr. Ross, was 400 grammes, and the highest 2,000 grammes.

REYNOLDS (E. S.) ON CHANGES OF THE SPINAL CORD AND PERIPHERAL NERVES AFTER AMPUTATION.—Having briefly referred to the history of the subject, and especially to some recent observations made by Friedländer and Krause, he pointed out that the changes in the case which he had investigated consisted in a simple atrophy of the majority of the fibers in the nerve-trunk of the amputated leg, with increase of lymph-spaces and connective tissue, and that this change could be traced up to the cord, principally in the posterior nerve-root, but also in the anterior nerve-root. In the cord the changes were limited to the lumbar region, and consisted of a slight decrease of the posterior horns and columns, and a more marked decrease of the anterior horns, affecting the number and structure of the cells in all the groups, but especially in the postero-lateral and central groups. Clarke's column was not affected.—*Brit. Med. Journ.*, Feb. 26, 1887.

THE SOURCE OF UREA IN THE LIVER.—Dr. D. W. Aitken, in the *British Medical Journal*, February 6, 1886. A boy who had received a blow upon the right lobe of the liver had pain, jaundice, pale stools, bile-colored urine, no fever, highly alkaline urine. On the addition of nitric acid such violent effervescence ensued as to force froth out of the test-tube, although the urine was not much more than one inch deep. The alkalinity was found to be due to carbonate of ammonia. There was only 3 per cent. of urea. Dr. Aitken from this evidence regards the liver as the generator of urea.

THE INNERVATION OF THE BLADDER.—A vesico-spinal center in the lumbar cord is not proved. Acute spinal lesions cause retention, by direct paralysis of the bladder or by lowering bladder tone, permitting distention by urine, loss of contractile power. The assumption of reflex controlling fibers, which in micturition control the normal reflex of the sphincter urethræ (lesion of which causes the so-called spastic retention of urine), is unfounded.

THE VOMITING CENTER.—Professor Tumas, by touching different parts of the medulla with a weak solution of apomorphia, so as to induce vomiting was able to

localize with tolerable precision the situation and extent of the vomiting center, which he found to lie in a space about 5 mm. in length by 2 mm. in breadth, before and behind the calamus, and in the deeper layers of the medulla. Section of the medulla at level of fourth ventricle does not prevent vomiting. Rabbits could not be made to vomit by any method of medullary irritation. The absence of vomiting observable in ruminants, rodents, and some other animals is due to their having no vomiting center, or only a very rudimentary one.

PSYCHIATRY.

A BLIND MAN ON MEMORY.—From some Open Letters of peculiar interest to the Blind by one of their number, we quote the following from the November *Century*: "As partial compensation, in the midst of his many discouragements, the sightless pupil possesses one vital advantage over his companions. His memory, accustomed to seize and assimilate definitions and miscellaneous information at a single hearing, acquires both a marvelous alertness and a phenomenal retentive capacity which enable him to master certain branches of study with singular ease and rapidity. Deprived of books and without any very ready and reliable method of making notes, he obtains a habit, often envied by the seeing, of appropriating instantaneously anything addressed to his intellect through his hearing. Hence the proverbially good memory of the blind person. His mind is his memorandum-book always at hand and always open.

"To the present writer, who never remembers having a lesson in anything read over to him more than twice, nothing is more strange and more amusing than a room full of school children, with fingers crammed in their ears buzzing over a lesson of three pages for the fifteenth time. Equally incomprehensible is it to see a man making a note of a single address, or a lady referring to a shopping-list. Such observations force one to the conclusion that the art of writing, invaluable as it is, has been disastrous to the human memory. people have grown so to rely on a piece of white paper covered with black scratches,

that if this be lost or misplaced, they are reduced almost to the condition of creatures without intellect.

"So marked is the advantage of the blind in this respect as almost to atone for their extra difficulties in others; that is, the sightless pupil will acquire scientific and philosophical studies with a rapidity which will counterbalance the greater amount of time demanded by his less facile methods of writing out exercises in linguistic and ciphering in mathematical branches; so that in taking the regular course in academy or university, he will require, all in all, neither more time nor more labor than the average student.

"Of not less value in after life is this extraordinarily trained and developed memory. It enables the blind to derive from lectures, conversation, and general reading, ten times the benefit of others, on whose minds a single mention of facts and thoughts makes little or no impression.

"Thus the law of compensation is seen working in all things, making good on one hand, approximately at least, what is wanting on the other; not by the special mysterious interference of Providence or other power with natural conditions and processes, for the benefit of the individual, as many claim, but through the inevitable sequence of cause and effect, by which senses and faculties become, through unusual training, abnormally developed and their value radically enhanced."

THE LANGUAGE OF TWINS—A QUESTION FOR PHILOLOGISTS.—Dr. Crabb, of White River, Kentucky, in a note to the editors of the *St. Louis Medical and Surgical Journal*, says: "I am acquainted with a couple of twin boys, seven years old, that can understand each other, and although it is impossible for their parents or any other person to understand one word that they say, they make their language intelligible to each other. I also know of twin girls, sixteen years old, that can talk to each other, and to another person their language would convey as little meaning as the ancient Hebrew would to a person who had never learned that language, although the young ladies mentioned can use a great many words common to the English language in talking with other people, but in conversation with each other they use a language of their own invention and peculiar to themselves."

NEUROPATHOLOGY.

TUMORS OF PITUITARY BODY.—Leclerc speaks (*Lyon Méd.*, April 24, 1887), of a man of 64, not syphilitic or alcoholic, who, seven years before admission, after a dizzy spell, had an attack of loss of consciousness, followed by no spasm or paralysis nor disturbance of speech. In June, 1885, there came on a violent pain occupying the right side of the head and the right eye. A year later rapid failure of vision in the right eye came on and a ptosis of the lid. Later, the same sequence of symptoms developed on the left side. Cerebral vomiting had existed for months.

On admission to the hospital there was double exophthalmus, double ptosis, more marked on the right side, slight dilatation of the right pupil with almost no reflex in either pupil. Amourosis on right side much impaired, vision on the left side, and optic nerve atrophy on both sides. There was no motor disturbance except a deviation of the tongue to the right. General sensibility was normal excepting the headache. There was towards the last anosmia and dementia. Death from marasmus was preceded by wild delirium. An autopsy disclosed a tumor the size of a turkey's egg occupying the site of the pituitary body.

An obscure case with a similar lesion is reported by Miles (*Analectic*) who was called to see a lady who was in a semi-comatose condition, in which she had lain for three weeks. She was fifty years old, well nourished, looked normal, could be aroused, but took no notice of those about her, would get up to attend to the calls of nature, or eat when aroused. There was no emaciation, and she gave the idea of hysteria except that she was too old. The family did not seem anxious about her. A week later he found she was dying, much emaciated, comatose, passing her evacuations in bed. He made a *post-mortem* examination. There was not much emaciation about the body, no escape of blood, and the tissues were very dry. The skull was not thick, dura mater not inflamed, no enlarged acchionian glands. He found the watery look of the pia mater so often observed after congestion. The pia stripped off very easily. The brain seemed to be normal. He could find nothing but some congestion in the corpus striatum, and was about to put the brain back when he noticed a trickling of blood by the sella turcica. He felt around the pituitary gland, which he had not removed,

and found a black mass which ran down to the jugular foramen, a little fibrous melanotic deposit, but there was nothing further. There was evidently a melanotic degeneration of the pituitary gland. There had been no hemiplegia, no paralysis, no congestion of the head and face.

THE PHYSIOLOGICAL ACTION OF TOBACCO.—Dr. Hobart Anthony Hare (Fiske Fund Prize Essay on "The Physiological and Pathological Effects of Tobacco,") concludes from his experimental researches, as follows: 1. Tobacco-smoking rather increases than decreases the elimination of urine. 2. It does retard tissue-waste. 3. Tobacco and its alkaloid depress the reflex inhibitory centers in the cord and cause convulsions in the primary stage of the poisoning. 4. It causes the palsy of the second stage, by paralyzing the motor nerve-trunks and the motor tract of the spinal cord. 5. The sensory nerves are not affected by the drug. 6. Nicotine contracts the pupil, by stimulating the oculo-motor and paralyzing the sympathetic, this action being peripheral. 7. Nicotine primarily lowers the blood pressure and pulse-rate; secondarily, increases pressure and pulse-rate; and lastly, decreases pressure. 8. The primary lowered pressure and pulse-rate is due to pneumogastric stimulation, associated with vasomotor dilatation. 9. The secondary stage is due to vasomotor constriction and pneumogastric palsy. 10. The third stage is due to vasomotor dilatation returning. 11. Death in poisoning from this drug is due to failure of respiration, the action of the drug being centric. 12. The blood-corpuscles are broken up by the action of the poison. 13. In death from nicotine-poisoning the blood shows changes in *spectra*. 14. Death may be caused by the cutaneous absorption of nicotine. 15. Tobacco increases intestinal peristalsis in moderate amounts, and produces tetanoid intestinal spasms in poisonous doses. 16. The liver seems to destroy the poison, although this destruction is participated in by any set of capillaries in other parts of the body. 17. Tobacco-smoking increases the pulse-rate and decreases arterial pressure.

DR. VELLETT ON BERIBERI.—Beriberi is an illness caused by privation. 1. It is most common amongst prisoners or in similar conditions. 2. It is contagious and endemo-epidemic. Its origin is not determined: it probably arises from faulty nourishment. 3. There are three

forms of beriberi—the paralytic or atrophic, the hydropic, called also hydromic or œdematous, and the mixed form.

4. These three forms are dependent on an acute myelitis, which reacts on the motor nerves, causing paralysis and atrophy, or on the ganglionic system, causing œdema through vasomotor paralysis. It sometimes reacts on both these systems, producing thereby the mixed form.

Beriberi is a serious affection. It is distinct from all other affections. Every treatment has failed up to the present day. Prophylaxis alone is beneficial. Immediately this affection declares itself the patient should be isolated under good hygienic conditions.—*Am. Lancet*.

DERMATOSES FROM EMOTION.—Dr. Leloir gives the following characteristics of the emotional dermatoses: Rapid onset after the moral shock, and, should the dermatosis not immediately succeed the shock, a series of nervous troubles, such as pruritus and neuralgia, precedes the cutaneous eruption. The progress is rapid, and the lesion soon attains its maximum development. The affection is always superficial, scarcely ever involving the deeper part of the skin, and being chiefly of the vasomotor, catarrhal, or pigmentary sort. Excessive pruritus is a feature of these dermatoses. Their duration is relatively short, and they are especially to be observed in females.—*Journal de Médecine de Bruxelles*.

NEUROSEMIOLOGY.

CYSTIC ANÆSTHESIA A SIGN OF ATAXIA.—Jonathan Hutchinson, in the *British Medical Journal*, under the caption of "Exceptional Symptoms of Rare Forms of Disease," reports the following instance of inability to know when the bladder is full in a case of syphilitic ataxia. A gentleman once told me that for nearly two years he had never known the feeling of wishing to make water. He went to relieve his bladder at stated times, and if he did not do this, overflow might occur, but he had never had any sensation whatever which warned him that the bladder was full. Incontinence had occurred several times in the night. He had never had retention. I found, as expected, that he was the subject of ataxy. His patellar reflex was quite lost, and so also his sexual desire and aptitude. His pupils were large and sluggish, if not motionless, on exposure,

but acted somewhat in accommodation. I have known this form of vesical anæsthesia, in some degree, in many other cases of ataxy, but never to so marked a degree. It may be of interest to note that in this instance the patient retained the appearance of good health, and had perfect use of all his voluntary muscles with good muscular sense, being a distinguished lawn tennis player. He was single, only thirty years of age, and had suffered from syphilis seven years before I saw him. He had suffered much from the characteristic pains of ataxy in his lower limbs, and also from pelvic aching. Although moderate exercise at tennis did him good, any unusual fatigue made his pains worse. He had, when I saw him, been already greatly benefited by a year's specific treatment of mercury and iodide, but the hebetude of his bladder remained as it was.

NEUROLOGY.

NASAL REFLEX NEUROSSES.—Schech (*Die Krankheiten der Mundhöhle, des Rachens und der Nase*) gives the following neuroses as due primarily to nasal disease:

1 Neuroses affecting the nose itself: Nervous coryza, associated with paroxysms of sneezing.

2. Neuroses affecting adjacent parts: *a*—Ptyalism (rare); *b*—Neuralgia, especially supra-orbital, also megrim and occipital headache; *c*—Vasomotor disturbance, causing swelling of face and conjunctivæ.

3. Neuroses affecting more remote parts: *a*—Possible vertigo and epilepsy; *b*—Cough; *c*—Vaso-dilator impressions to the mucous membrane of the bronchi, observed by Sommerbrodt.

4 Asthma.

EDITORIAL.

All Unsigned Editorials are written by the Editor.

The Care of the Insane.—As a type of the vigilance habitually exercised in our asylums, to prevent harm, self-inflicted or otherwise, to these afflicted children of misfortune, we present the following notice to Attendants and Assistants in the Iowa Hospital for the Insane, because it appears in more condensed form than the same precautions and instructions of other institutions, though all are about the same in spirit:

It is the earnest wish of the trustees, superintendent, and all others interested in the good management and success of the Hospital, that all persons committed to its charge and care, should be treated with kindness, and receive all needed attention to their bodily wants, as well as have such influences thrown around them as will tend to make them feel they are among friends who are disposed to make all needed sacrifices to promote their welfare; treated as we would wish those dear to us to be, under the same circumstances, or as we would wish to be done by if we were in their places.

The duties of attendants are responsible and honorable, and it should be their aim to so conduct themselves in the Hospital and out of it, as to bring no disgrace upon themselves or discredit upon the institution they serve. The nature of the position is no sinecure, and requires, to obtain the best success, a sound body and well balanced mind. If "eternal vigilance is the price of liberty," so constant watchfulness, united with judgment and tact in managing others, is the price of success in an attendant upon the insane.

The following minor rules and instructions, found necessary for the practical working of the Hospital, are added to those to be found in the By-Laws of the institution:

1. Special attention should always be given to the care of bread and carving knives, and the dumb waiter doors should always be locked while patients are in the dining-room.

2. No knives or other articles should ever be taken from the dining-room by patients, and the knives and forks should be counted after each meal.

3. Care should be taken that nothing which could be used offensively is brought in from walks or elsewhere.

4. The dining-room doors should be locked while preparing the tables, and after the meal until the dining-room work is done.

5. No patients except those designated by the physician or

supervisors should be allowed to assist in the dining-room, or go out to assist elsewhere.

6. Attendants should be watchful and accompany the carpenter or other mechanic while in the ward making repairs, or if work is being done in a room, the door may be locked.

7. Towel rollers should always be secured, and the towel racks locked.

8. Ordinarily, one half-day, from one to five o'clock, will be given an attendant each week for recreation; and in the evening, from seven to ten, one-third of the attendants may be absent. The same rule will apply to absences to attend church on the Sabbath. Leave of absence (for day or evening) will be arranged and given by the assistant-physician in charge.

9. Attendants passing through the center building will please open and close the doors carefully, make as little noise as possible in going up and down stairs, and refrain from conversation while on the office floor.

10. Particular attention must be given to the rules in regard to the use of restraint. When directed by a physician, it should be applied in a kind manner, and as gently as possible. The idea of punishment should in no case be conveyed to the mind of the patient. In relating the conduct of patients to the supervisor or physician, let it not be done in the presence or hearing of the persons reported.

In your association with your charge as *attendants*, remember the meaning and force of the word; let nothing in your manner or conduct suggest the idea of an "overseer" or "keeper."

Give much attention to the care of the sick and those who may be in bed from any cause; see that their food is served while warm, and presented in as attractive a way as possible. In bathing, give particular attention to the temperature of the water, and follow closely any directions that may be given you in reference to special cases. After coming out of the water dry the patient rapidly, and put on clothing immediately. See that the tub is emptied after each bath.

In bathing the feeble, or those very ill, great care should be exercised, that the effort does not exhaust the patient. Such persons should be carried, perhaps, on a bed, and after coming out of the bath, should be placed in a recumbent position or in an arm chair, dried and clothed quickly, to prevent chilling. Ask for directions in all cases where you are in doubt as to the best course to pursue.

Be cautious about wasting gas or water, turn down the gas in the attendants' room when not occupied, and in all other places when no longer needed, and when it can be done without inconvenience to anybody. Report all leaking of gas or water, broken glass or other damage, to the first officer who visits your ward.

Persons who want employment for a few months only, or whose motive is to find "an easy place," better not apply for the place of an attendant. Such persons are not desirable, and are not wanted. It is expected that those employed come with the intention of remaining at least one year. It is also desired and expected that persons wishing to discontinue their service, will give one month's notice of such intention.

All employes of the Hospital are invited to frequent interviews with

the officers relative to their duties, condition of their wards, and all other matters connected with their work and their relation to the institution.

H. A. GILMAN,

January 1, 1883.

Superintendent.

Epithelioma and its Cure.—Can medicine do no more in this dread disease than diagnose it and seal the death warrants of its victims? Must we content ourselves forever with the life assurance vocation of making only forecasts of life probabilities after determining the nature and existence of this malady in our patients? Yes! if we are to remain to satisfied with our present methods, and with treating the local product and result alone, which is the epithelioma, where we see it only, and not the perverted physiological process that determines the product. No! if we search for that morbid predetermining process until we shall have learned with certainty its real nature and its true remedy. How long was medicine in the dark regarding the real nature of syphilis and its remedy before it obtained that triumphant knowledge and mastery over this scourge which has saved an imperilled race? Civilization had waxed and waned and almost died in the dormant sleep of the dark ages before the rescuing discovery was complete.

The cancer cell is not all there is of cancer, and the doctrine of migratory cells, as causes of disease, is probably as mythical as the theory of the Wandering Jew.

That the cancer product has certain specific and definite characteristics need not be denied, but the perverted determining physiological process is behind this, and are we never to find a remedy for the determining conditions and the destructive result?

Yes, if the profession but persevere, it will accomplish the cure of cancer as it has accomplished, by perseverance, the cure and prevention of other once-called hopeless diseases. Not so much is to be accomplished, however, by studying alone the spot at which cancer appears in the individual, as a study of the whole patient, and all possible determining causes. The investigation must continue to be broad and general, as well as special. It is not exclusively the concern of the laryngologist when it attacks the throat, of the gynecologist when the uterine cervix is seized upon, or of the neurologist, if the brain or medulla become its selected site. It is a subject for all to study, because it is a common and not yet understood foe.

There are conditions which seem to predetermine cancerous deposition besides local irritation which are worthy of consideration. These are chiefly those influences which overstrain and exhaust the vital nerve centers, especially of the ganglionic system, and precipitate degeneracy in the normal cell genesis of certain tissues.

Among the senile and the prematurely senile from unsanitary food and air and mental strain, and the vicious and exhausting play of the depressing passions, those who fall under the stress of great grief, state affairs, extreme worry and disappointed ambition, we find its victims, and in the tissues that suffer the greatest and earliest decadence we find cancer manifested. It is a disease of neuropathic degeneracy.

Many years ago we noted the interchangeability of the cancerous and the neuropathic diathesis, for cancerous degeneracy is a diathetic condition. The statement elicited some humorous animadversions at the time, but nobody doubts the fact now, and no one doubts that the causes which tend most to break down the brain and allied nervous system tend to develop cancer. How can they, when the examples of Napoleon at St. Helena after the Waterloo of all his hopes; of Grant, at Mount McGregor, after the blasting of his good name through his unfortunate financial associations and failure; and the death of Benton, and Clark and Roach, and a host of others of the same disease, after going through great crises of mental strain or shock into neuropathic decadence at the time of life when the vital waste and repair are nearly equally balanced, with the tendency to waste preponderance and inadequate central recuperation?

If we look for them we may see in every walk of life men of great action and energy in state or business affairs, lawyers, merchants, politicians and overstrained physicians, succumbing in the early decadence period of life to great nervous strain and cerebral shock.

We should like to know if some mental strain beyond inherent capacity of endurance has not been upon the Crown Prince of Germany, of which the outside world knows little. The heir apparent of the greatest throne of all the Hohenzollerns, the nation just now more conspicuous, more prominent than any other in Europe, and whose crowned head is destined soon to have thrust upon it responsibility greater than any that has in modern times rested upon a king, it would not be strange if Unser

Fritz, the idol of so many of the Germans, and who holds views of public polity not all in accord with those of Bismarck, Moltke and the Warrior King, should have lately felt with undue force the impending weight of affairs of state and have been depressed from the head down, at the contemplation of so grave a responsibility. Such a strain may permit constitutional conditions to localize in morbid action. This is all the more probable when we consider not only his peculiar relationship in sentiment to the views of his elders in authority, but when we regard his age—fifty-six—the common age of neuropathic and cancerous degeneracy from overstrain and the perilous physical enfeeblement through which he was brought by careful nursing in childhood and youth. The adequate stamina for the neurotic strain of statesmanship, though it sustained him through the Franco-Prussian campaign, as the constitution of our own general Grant sustained him in the campaigns before Vicksburg and Richmond, was not inherent in the Crown Prince, and at the critical period he goes under with a disease of trophoneural degeneracy, as we believe.

Can the sufferer at San Remo be saved? Experience and precedent answer—No! Shall we be forever satisfied with so hopeless and barren an answer?—No! We ought not to be, and here precedent and experience, while they compel a despondent answer as to the Prince's life chances, point to a possibility of recovery by a vigorous treatment of the patient with a view to the restoration of degenerative trophoneurotic conditions and the arrest and removal of local morbid processes and products.

Benignant tumors are removed by electrolysis; so are malign. Benignant tumors are curable by persistent electrization,—why not malignant? We believe they are and can be, when treatment is perseveringly and hopefully pursued. Electricity is the best and most effectual of alterative and neurotrophic tonics. A remedy which may be so used as to cause the coagulation of the blood, as we know it can and does in aneurism, may be so employed as to alter in a curative manner the degenerative product which we call epithelioma. A remedy which has the demonstrative power of control over the vascular system through its vasomotor mechanism and over the ganglionic and cerebro-spinal centers, so as to promote the most marked and positive nutritional changes, ought not to be longer ignored. Its well-known power, now taken from

the hands of reckless charlatanry and demonstrated to the satisfaction of the most scientifically credulous among regular physicians, to favorably modify organic conditions, and reform morbid processes, ought to commend the conjoint employment of both galvanism and franklinism in the management of every case of cancerous degeneration, whatever other therapeutic measures, local or general, may be employed, and electrotherapy should not be omitted a single day, but be given as prominent a place as sunlight, suitable food and fresh air.

In this journal (July, 1882) we have before (based on incidental experience) indicated our faith in electricity for cancer, conjoined with a persistent and judicious reconstructive neurotherapy; and the flight of time since then has not weakened our faith that in this path lies final victory. At all events we shall continue to fall and stand before the world helpless as now if we hoot at this, elsewhere potent force, as impotent here, without giving it a thorough trial. Its established and proven power in the domain of nature and the arts, in chemistry and physics, and in the human organism, entitles it to something more than incredulous disdain or cundurango confidence.

It is a force which is proven to have decided power to improve the nutritional processes, to remove morbid depositions, to contract both involuntary and voluntary muscular fibre, to promote endosmosis, as well as to cauterize and remove living or dead tissue; and this tried power is offered as an agency that may promote the cure of a disease whose cure is, and has been, since its first differential diagnosis, on trial, and never certainly accomplished. Let it have a patient and persistent trial from the beginning to the end of every case, for its general and nutritional and alterative influence, even as we try other remedies, which sustain, though they do not cure our patients.

But in electricity in its different forms we have a remedy whose curative powers, demonstrably great and wonderful, have not yet been defined and limited; a remedy which may be so used as to regulate and sustain morbid as well as physiological action; a remedy whose local electrolytic powers of destroying tissue are equaled by its capacity to sustain and restore both general and local physiological movements.

Let electricity be tried as faithfully on cancer as the

knife has been, and by as skillful hands; let it be employed with as much fidelity as the escharotic pastes and the internal remedies have been tried; give it at least the credulous faith the profession gave cundurango, for electricity has done, and is doing, in faithful hands, good enough work in the restoration of other pathological conditions of the human organism to justify a degree of credulous confidence in the curative power of the morbid process of cancer.

It will remove the cancerous deposition as effectually as the scalpel, and from recesses the knife cannot reach. What it can do for the direct removal of cancerous growth it may, and we believe it will do, for the precursory and predetermining morbid process.

It will remove and prevent the deposition of an adventitious growth in a motor, sensory or psychical nerve center. Why may it not,—why will it not as well alter the conditions which cause and the cacoplastic growth which makes an epithelioma, the cacopragia and the cacoplasma of cirrhosis.

Of its power in both directions we have seen in our practice some confirmation, though not such, because probably of comparatively limited and incidental experience, as to justify a positive dictum on the subject.

We have seen sufficient, however, to inspire a hopeful faith for the mastery of this dread disease; and though its treatment does not, by professional consent, yet lie in the line of neurology, we venture these expressions of our convictions on the subject for the consideration of those in the profession more especially concerned in the treatment of cancer.

The following is the kind of a case, which, as far back as 1880, first excited in our mind the suggestion that possibly cancer might be cured by electricity, and in 1883, one especially marked case came under observation with marked general neurotrophic and neurasthenic symptoms, insomnia, mental anxiety, nodulated left mamma, retracted nipple and lancinating pain in the breast. Patient's age was between fifty-five and sixty. The case had been pronounced cancer of the breast by good surgeons and an operation proposed.

This case recovered in due time under daily static insulated treatments and local constant electrizations descending from cervico-dorsal spine to breast for relief of pain. Hypophosphites, muriate of ammonia and bromide

of ammonium with arsenic were given internally. The patient came from Burlington, Iowa. She is still living there and well. The breast shriveled and is about the size of its opposite.

Another case almost identical came later under our observation, but declined the treatment proposed, and died in the hands of other physicians, of cancer of the breast.

It is not uncommon to see painful tumors disappear incidentally to the treatment of associated nervous conditions, but, of course, the neurologist does not treat many cases of pronounced cancer, as they remain within, and seldom pass from, the hands of the surgeon till after the knife has been tried and the patient passes thence beyond the reach of surgery.

It matters not, however, whether the recently discovered cancer bacillus be a true *causa morbi* or simply a scavenger parasite, so far as the treatment is concerned, for though time may overthrow this theory of the neuropathic cause of cancer, it cannot vitiate the logic of its treatment. Electricity may destroy the bacilli and correct the conditions essential to their vitality as readily, whether they be the cause or the product of lowered vitality; it is as competent to alter a condition or a cause as it is to destroy a consequence.—[C. H. Hughes, in *Weekly Medical Review*.]

Medical Experts.—We feel constrained to add a few words to what has already been said about medical experts, words which it is our desire to see stand as cautionary signals for times of security as well as danger. We feel that there is precipitous impulse in young ambition towards the notoriety of appearing as an "expert" in some legal case where the disposal of human life or fortune may hang upon our very lips. Nothing could be more unfortunate for the moral welfare and professional standing of a man than that he should allow himself, on the strength of mere average information, to be induced to deliver a medical opinion in a case requiring special research, observation, and clinical experience. It is so manifestly wrong, that to be the purveyor of "expert testimony" ought rather to be shunned than sought by young practitioners.

But people's views of qualifications differ so widely, that an over estimate of one's ability may often be to blame for such high pretension. Doubtless, there are honest men of meagre attainments who are quite deceived as to their

own ability to give expert testimony. This is deplorable, but a fault which it is hard to correct, though the best safeguards of ignorance in medical jurisprudence lie to a certain extent within the reach of all.

In rendering expert testimony, under no circumstances should we allow ourselves to be misled by presumptive reasoning. The initiatory probabilities of the case lie in the often neglected circumstance of obscure nervous disease. Instruments should be used to test the verity of symptoms. The ophthalmoscope should be brought into play. Often we must go back to our physiological experiments as far as the myograph. We must test the quality of reflex action and the conditions of nervous phenomena. Back of all this stands the temperament, habits, and family history of the patient, with all the concomitant possibilities of accident, progressive disease, etc., etc. All this involves careful and deliberate study, in the pursuit of which it should be borne in mind that the object of the physician is limited. He seeks, for example, to settle the question of mental responsibility. In such a case, let him beware of the jurisprudence that is to offset his medicine. If he dread rebuke and ignominy; above all, if he be a conscientious man, let him never presume to know more than he does know. A shrewd cross-question will certainly undo him, and he runs a risk of fatal inaccuracy which may involve tremendous results. A little episode in our knowledge transpired during a murder trial, where a certain physician appeared to testify concerning a fracture of the cranium. Incidentally, he was asked how many and what bones there were in proximity to the fracture, and, having long since set aside the anatomy of the head as a branch quite useless to him, he was much chagrined to find himself at sea. The enormity of such ignorance is, of course, less comprehensible to outsiders than it is to the profession. We cannot keep forever posted on everything, but the above case is a warning to superficial "experts."

As regards his appearance in court, the physician should support first the dignity of the profession, and then his own dignity. The first requirement will be fulfilled, if the conditions before mentioned are present. The question of personal dignity calls for the conduct of a gentleman, with special stress on the preservation of the temper under all circumstances. Legal querists are often aggravating, but serene minds must surmount all annoyance. Great care is needed at times to avoid the logical pitfalls

of a cross-examination. Beware, also, of unqualified answers, which may be twisted into testimony on the side opposite to the truth. Especially beware of shams of all kinds. A wily examiner, wishing to test an expert's veracity, asked him if he had read such and such a work on the subject in question, whereas no such work ever existed. Frivolity is also a snare to the inexperienced. Beware of inopportune jokes. Do not allow yourself to be dragged into discussions of extraneous subjects. It is by such means as this that many men of fair attainments are plunged into the abyss of apparently hopeless incapacity. —*Medical Register.*

Our friend the *Register*, while speaking true and timely words might have said more in condemnation of amateur and pseudo expert testimony. To testify as an expert, without expert knowledge is perjury, for the expert witness swears that he possesses the necessary knowledge for expert testimony. False and incompetent expert testimony is one of the greatest evils of American medical jurisprudence, prostituting truth, and harming the social rights of humanity.

Pseudo medical experts pervert public sentiment and judicial opinion, to the injury of the innocent and the degradation of medicine.

The conceited, presumptuous pseudo expert, who substitutes great pretention for great learning, and palms off in courts and public inadequate acquisitions and general conceptions for the deep truths of any department of scientific knowledge, is a fraud upon justice which the courts ought not to permit to defeat the aim of law, which is to secure the right and prevent what is wrong. Yet these men are allowed to testify as experts on their own recognizance as it were, though the false, conceited amateur pretender to medical expertness he does not possess, in a question, for instance, of life or death, may seal the fate for weal or woe, of a fellow more entitled, mayhap, to be regarded as an honorable man, than the expert himself.

Courts should have some rule of testing and proving the qualifications of expert witnesses, and apply it rigidly to all pretenders when grave issues are at stake.

Consider the Drunkard.—A recent discussion before the Medico-Legal Society prompts this word: All vicious indulgences ultimately lead to disease in some form or other as their penalty. To this fact alcoholic

indulgence is no exception, and the vice of one generation becomes the disease of the next. Ordinarily, drink must be indulged in for a while, and usually is, before drunkenness becomes a habit, a vice or a disease. Sometimes a very brief indulgence, even a single drink, awakens a latent volcano of nervous instability, whose pent-up violence is spent in startling destruction. Then we know something highly abnormal has pre-existed in the neurotic organism awaiting only the spark, like silent gunpowder to excite an explosion.

The question in every case for the medical men and jurists to solve is, how much of intemperance is the result of disease, and how much is vice. A perplexing and difficult one often. The law and the Gospel take no note of an exclusive disease theory of intemperance, nor could a view that all intemperance is disease be the product of true psychological science, but of mingled sentimentalism. There is undoubtedly a true dipsomania, which leads its victims to alcoholic or other excesses after temporary indulgence, as there is an erotomania, a pyromania or a kleptomania, but these are the comparatively exceptional forms of intemperance, as they are of insanity in general.

Great harm may be done the cause of true temperance by palliating *all* intemperance with the false plea of disease, to which extenuation this vice is no more entitled than are those of lechery and gluttony, both of which have often disease associated with them. The drunkard should not be reminded of his weakness, but of his strength. Nevertheless there are drunkards in every community who are no more directly responsible for their inebriety after a certain stage than epileptics are for having seizures in the street cars and in other public places, and violating the proprieties of their social environment. What medical men and the law wants is a differential sign between the man who speers of deliberate choice and the inebriate victim of a morbid organic impulsion he has no power to control. This is to be found chiefly in a well-defined neuropathic heredity or in an ancestral history of great nervous shock or overstraining, and in the unfortunate individual's antecedents as to nervous health—some critical disease of the higher nerve centers has left them weakened, as a typhoid or a brain fever, a sunstroke or a malarial congestion of the brain.

There are defective organisms that cannot help drinking

--dipsomaniacs who inherit unstable nervous systems, and there are those who indulge in drink for pleasure, like the lecherous and the gluttonous. There are also satyriacs and bulimics.

The charitable mantle of disease should not cover all. Disease sometimes precedes drunkenness; disease often follows it. It is thus that wine is a mocker.

Whether disease precedes or follows, let the State provide for its cure, and then legally restrain the drunkard. If he drinks to the detriment of his family it is the State's duty to provide protection to the family. If disease impels him to drink he will acknowledge the justness of his deprivation of liberty after he is cured. But there is often both vice and disease in persistent voluntary inebriety, just as there is in excessive tobacco, venery and other vicious indulgences.

Let the State establish a reformatory for inebriates (on the same principle as the State lunatic asylum), for restraining the improper propensity to drink. In all drunkards the will becomes more and more subordinate to the appetite as indulgence continues. In some it is almost lost from the beginning. These are the true dipsomaniacs.

An inebriate asylum should be a community with every appurtenance of good society but liquor. The church and the minister should be there; the physician, likewise, and the instructor for the young.

The old and vicious should be separated from the young and impressible. Music of the right kind, and books and suitable diversions should be in every such institution. The strong arm of the law should be felt constantly. The habitual drunkard should be disfranchised as the lunatic and the imbecile are, and no drunken man should be allowed to approach the polls or cast a vote while intoxicated.

The time will come when correct notions will pervade the public mind on this subject and philanthropy, through moral suasion and total abstinence pledges alone, will not be expended in vain upon the organically unstable inebriate, to be made the laughing-stock of those who deem it no part of life's duty to be "their brother's keeper."

Scalpine is the very appropriate name of a new patent medicine.

Then and Now.—In 1879, when the ALIENIST AND NEUROLOGIST was but a conception in the mind of its editor and publisher, he addressed letters to certain persons whom he supposed might be interested in the foundation and growth of a new psychological and neurological journal, and received responses from many friends, some encouraging and some otherwise. But some in the East saw no need of more light. The Occident might illumine the Orient with neurological light, but only as the pale moon reflects the rays from the sun.

The following excerpt, from a real friend, is a sample of one of the initial epistolary dampers to the ardor of over sanguine expectation from the land of early sunlight and science:

* * * * * CONN., September 9th, 1879. *

MY DEAR DOCTOR:

It is a pleasure to know from your letter that the prospects are so favorable. When I received your announcement the thought passed through my mind that you were attempting a work which was not needed, or in other words, with the *American Journal of Insanity*, the Chicago Journal, and the one being published by Dr. Seguin in New York, it seemed to me that the field was wholly occupied. In fact I doubt whether your endeavor will be pecuniarily successful. Probably you remember that two or three journals have been started by our most eminent men, such as Brown-Sequard, Seguin, Weir Mitchell, without receiving a support. However, with the usual push and vim which characterize Western enterprise you may be able to succeed, and I certainly wish you most hearty success.

Sincerely your Friend,

* * * *

The ALIENIST AND NEUROLOGIST came out in the following January however, and though some of its journalistic cotemporaries predicted the initial appearance would be its last, it has continued in the field and appeared regularly from that remote day, in ordinary journalist life, to this, growing stronger with its ripening years, though it has not yet reached its destined full maturity; and we have every reason to believe and confidently hope it may be many years hence, until its waxing powers shall pass into the waning strength of natural decrepitude.

Neither the JOURNAL nor those who conduct it are too old for more good work. Some of its faithful collaborators, it is true, are in the sere and yellow leaf of life, but they are not yet sapless or incapable of bearing good fruit, as their fruitful labors do yet prove in our pages. Many have yet the lithe and sinewy strength of earlier years, a-

youth renewed each year (by faithful, generous work), and the words of hope and cheer that come from hundreds of buoyant sources are all in tenor like the following:

* * * * MARYLAND, Oct. 25th, 1887.

ALIENIST AND NEUROLOGIST:

Inclosed please find my check for ten dollars, amount of your bill.

I surely *could not do without* the JOURNAL, for no other, either American or European, is equal to it, and I thank you for its continuance notwithstanding my neglect.

* * * *

The journals that predicted our early demise are themselves all dead. One that could not find a place on its "already too large exchange list," still lives a sickly life in the far off East, scientifically sunstruck, as it were, with the effulgence of its own eminence, and weakened, like the overtaxed electric eel, by an excessive and too prolonged discharge of its own scintillating force.

The friends who doubted have long ago given us their faith. Neither scorn nor envy, nor sinister design, nor fear nor doubt, nor foe malign, are in our way, and the little craft you helped us to launch, gentlemen collaborators and friendly subscribers and advertisers, has now sailed safely over eight annual seas of storm and sunshine, and with your kindly aid of heart and purse, and head and hand, our journalist ship bids fair to sail on for another decade or more. Its able helmsmen and sailors aloft and below, inspire this confident, cheerful hope. May it ever prove seaworthy in every stress of sea, and fulfill all the desire and aim and hope of its friends.

The Administration of Chloral.—Battles' Bromidia is a clean and palatable compound of approved hypnotic principles. The proportion of bromide of potassium in its composition, to the chloral, could well be doubled for most of the purposes for which such a hypnotic combination is indicated. The directions accompanying this excellent hypnotic combination suggest a criticism. The injunction to not exceed three or four of the doses indicated in twenty-four hours, and, to administer preferably during the evening, or nighttime, would avoid many of the evil results which follow the injudicious use of this and all similar narcotics.

Those of our readers who desire to use this compound in practice (and when its ingredients are indicated no better mixture can be found) will find it give much better

satisfaction in states of mania and high cerebral excitement, in double the ordinary dose at about nine o'clock p. m., or, at an hour or two before the patient's ordinary time of going to sleep, when well, adding thirty grains more of bromide of potassium, and plenty of peppermint or other aromatic water, to protect the lips from being blistered by the chloral, as is liable to happen if chloral is not given well diluted. We write this prescription thus:

R Bromidæ	-	-	-	-	-	3 ij.
Kali bromidi	-	-	-	-	-	5 ss.
Syr. Tolu tar	-	-	-	-	-	5 ij.
Aq. Menth. Pip. qs. ft.	-	-	-	-	-	i.

Ft. haustus in aqua q. s. S. Give at eight or nine p. m., in plenty of water. Repeat once during night if necessary.

Fifteen grains of chloral, given every hour in cases of high maniacal excitement, may prove abortive, and the patient's blood may, at the end of five or six days, or even hours, of such treatment, become vitiated and depraved, the vital centers of the medulla weakened, and when, as sometimes happens, the attending physician, or another one, called in, becomes desperate, and gives a very large dose of chloral, no reaction follows the profound hypnotic impression, the cerebro-medullary centers being completely overwhelmed and incapable of that physiological rest and rebound which should be the aim and result of all therapeutically-induced slumber.

Fifteen grains of chloral in mania, as a general injunction is bad. A full dose at the right time, when nature is likely to incline most readily to rest, and not more than once repeated, and without previous small, abortive, and of course damaging doses, is better. No experienced Alienist would stereotype such a direction for mania and states of high cerebral excitement.

We make these remarks because bromidia is a combination the profession does not wish to dispense with, and a good remedy may be put before the profession with bad directions.

The administration to epileptics of anything with chloral in it during the time when the patient is going about is also unscientific advice. The same criticism holds good in regard to nervousness and irritability in persons going about. It is dangerous to give chloral to persons who are not in bed or going immediately to bed, to remain till the effects of the chloral pass off. If this danger is

kept in mind and chloral is only given to recumbent patients late in the day, in the evening or nighttime, in a single, or at most a duplicated dose, nicely adjusted to the demands of the case, no untoward result need ever follow its use.

We should never give chloral for headache or neuralgiæ in the daytime unless the patient should be sadly in need of and ready to go to sleep.

Chloral imbecility may readily be induced by giving repeated small, ineffectual doses, and it requires large doses to prove effectual in great cerebral or sensori-motor nerve excitement, when the patient is sitting up or going about.

H. Oppenheim (Zur Pathologie der disseminirte sclerose. *Berliner Klin., Wochenschrift*, 1887. No. 48.)—O. has arrived at the conclusion that beneath the clinical picture of spastic spinal paralysis there is frequently hidden (more so than is generally believed) a disseminated sclerosis. The optic nerve, the chief guide in nervous disease, plays here, too, a very important diagnostic rôle. Too frequently an ophthalmic examination has been neglected in cases of spastic spinal paralysis when no evident lesion of the optic nerve seemed to exist. O. has had a number of cases under observation, in which, at the beginning, there was only disease of the optic nerve, and the other characteristic symptoms were developed later in the course of the trouble. In twenty cases of sclerosis multiplex he found eleven in which were pathological conditions in the optic nerve, and five cases which were examined *p. m.* showed sclerotic foci in the optic, the chiasma and the optic tract. In spastic spinal paralysis pure and simple then, we have often a grouping of symptoms indicative of disseminated sclerosis, and when disturbances of vision complicated spinal spastic paralysis he believes himself justified in calling it a chronic form of disseminated sclerosis. O. mentions the interesting fact that in spite of an immense number of sclerotic patches found, *p. m.*, in the medulla oblongata, there were no bulbar symptoms during life. In a number of cases he has seen pathological states in the optic nerve, although there was an utter absence of eye symptoms during life. In one instance the spinal symptoms presented the chronical picture of a transverse myelitis. Formerly it was believed that sclerosis multiplex was

exclusively a disease of adult age. O. saw it several times in children at the age of four to seven, and in two boys aged twelve and thirteen in whom the trouble was a sequel of scarlet fever.

Another point hitherto not sufficiently insisted upon by the author: Multiple sclerosis in the adult can frequently be traced back to early infancy. Trembling, difficulty of speech, vertigo, etc., were often found to have existed in the childhood of individuals in whom disseminated sclerosis developed later on.

The progress of the disease extends in some cases over several decades, and shows intermissions of considerable length. In others, the development and progress is apoplectiform. In place of these apoplectiform attacks in the brain or spinal cord a vertiginous state of several days' duration takes place.

The various symptoms of disseminated sclerosis are, in a great number of cases, marked by acute development and the transitory character.

There are few cases which do not show, in the course of the disease, anæsthesia in some part of the body, but it is generally of a transitory nature. There may be temporary monoplegia.

Impulsive (forced) laughing has been frequently observed, and observers have brought it under the head of psychical anomalies. This is erroneous. It takes place without the slightest joyful sensation. One patient said he would have to laugh even at the sight of his own coffin. B.

Illustrative of the Evils of Premature Removals of Patients from Asylums for the Insane.

—The managers of the Buffalo, New York Asylum, give examples of six patients who have been removed within the past few months by their friends, who assumed the responsibility, contrary to the advice of the asylum authorities: Of these, one became maniacal and destructive of public property; another burned down her father's house; another committed suicide by shooting himself through the head; another by taking Paris green; another was returned to the asylum within seven days in an acutely maniacal condition, and in the last case the patient, after having become violent and destructive at home was recommitted to the asylum. Such facts as these, and an accumulation of this kind of experience, teaches the necessity of great caution in regard to the discharge of patients from the asylum.

New York Quarantine.—Mr. David W. Judd, State Quarantine Commissioner for fifteen years, presents, in the *American Agriculturist* for December, a detailed history of the Quarantine Establishment at New York for one hundred years. It will be read with special interest at this time, when cholera threatens the country. Mr. Judd writes: What is known as the New York Quarantine Establishment is located down the Bay, ten miles from the city, near to Fort Lafayette, between Staten Island and Coney Island, just in and below "The Narrows."

It comprises, first in importance, Swinburne Island, on which the hospital wards are located.

Second in importance, Hoffman Island, on which well passengers are detained.

Third, the quarantine anchorage grounds, including the Detention or Hospital Ship Illinois, now temporarily disabled.

Fourth, the residences of the health officer and deputies, located on Staten Island, just above the Narrows.

Fifth, the boarding steamers, and steamers for conveying passengers to and from incoming ships.

Sixth, the quarantine burying ground at Seguin's Point.

Swinburne Island, completed and opened for hospital purposes in 1870, covers an area at its base of three acres, and gradually sloping inward shows a surface above high water mark of two acres. It was made by placing cribs of stone and sand filled one above another and surrounded by riprap of very heavy stones, which protects it from the action of the sea. The hospital buildings proper are divided into wards eighty-nine feet long, twenty-four feet wide and twelve feet high, capable of accommodating in all over five hundred patients, at a time. The wards are very roomy and provide for a perpetual current of air, so often lacking in hospitals. Indeed, this Island is so healthful and invigorating that during the time I have been commissioner (some fifteen years), I cannot recall that we have lost any nurse, hospital attendant or other employe on the island from contact with cholera, yellow fever or any other diseases brought to the island by the patients.

On the seaward end of the island, facing Sandy Hook, is the residence of the Superintendent, who is required to be in constant attendance during the active quarantine season, when incoming vessels with sickness are expected.

All of the wards for the patients and sleeping apartments of the nurses and employes are connected with the Superintendent's residence by means of a corridor nine feet wide and running the entire length of the hospital wards.

The work on the foundations of Hoffman Island were commenced in 1869, and completed at an expenditure of about two hundred and seventy thousand dollars, without the buildings. It was made of crib work, the same as Swinburne Island. Three large story-and-a-half brick buildings were constructed. These buildings are very large and spacious, containing all the necessary appurtenances for cleansing passengers and disinfecting clothing. Here those who are believed to have been dangerously exposed to cholera or other diseases, are retained for some time separate from the other passengers.

The Quarantine anchorage grounds are below Swinburne Island, toward Sandy Hook. The steamer *Illinois*, loaned temporarily by the United States War Department in 1863, and permanently in 1870, to the Quarantine Commissioners, is by law required to be moored here from the 1st of May until the 1st of November, as a residence for officers whose duty it is to board vessels from infected ports, also as a ship for observation. In the winter time she is brought to Staten Island, and moored.

All vessels arriving from the West Indies, South American ports, and from the west coast of Africa, are required to come to anchor in the Lower Bay. All other vessels come up to the Narrows, opposite the health officer's residence, and are boarded in a steam tug or in small boats, by the health officer's deputies. The object of boarding from two points, that is, the Upper and Lower Bay, is to keep all vessels coming from infected ports, or likely to be infected with cholera or yellow fever, as far away from the city as possible. When a vessel arrives with cholera on board, or during whose voyage any cholera cases have occurred, the passengers are immediately taken off and sent to Hoffman Island. Then, as the disease manifests itself, the patients are transferred to the wards on Swinburne Island. After the passengers are taken from the vessel she is thoroughly fumigated and disinfected, and allowed to proceed to the city whenever the health officers and commissioners are satisfied that she can do so with safety.

Some Subjects Not Strictly Neurological.—*Taxes on Physicians' and Surgeons' Instruments.*—A resolution of the Georgia State Medical Society calls timely attention to the wrong the Government is indirectly doing to poor sick and maimed by the tax it imposes on surgical and medical instruments and appliances of foreign manufacture. We hope all who read the ALIENIST AND NEUROLOGIST, republican, democrat, mugwump or prohibitionist, whether believing in tariff for revenue only or for protection or an absolute free trade and direct taxation, will join in using their influence upon Congress to abolish this unjust tax, which bears so hard on a class of citizens who have burdens enough in their affliction and whose pockets are usually too much depleted by the adversity which so often attends upon physical affliction to respond, without additional pain, to this Government demand for blood-money.

It may in times of war be technically right that the Government that protects with its strong military arm should demand the precise pound of flesh from its physical and financial cripples, but it is a right which ought to be waived for that broad humanity's sake so much professed by American statesmen, though not always practiced, in times of peace.

Let the medical profession see that the Government tax on medical and surgical instruments and appliances is removed entirely; and let the profession see that it and their patients, especially the many poor among them that we have always with us, get the full benefit of the consequent reduction in the price of these essentials to the recovery of the afflicted.

Substitution by Druggists—Counter Prescribing—Proprietary Remedies.—A recent suit of Battle & Co. brings up another subject which calls for remedy at the hands of physicians, namely, substituting "just as good" drugs for the preparation prescribed. A druggist who offers to substitute anything of which the patient is not a proper judge and on which the physician, by his prescription, has passed his judgment, transcends his province, and displays only the proverbial, dangerous conceit, which comes of a little learning in materia medica and none in clinical medicine.

A druggist has no right to offer to make the patient a judge of a matter which the physician does not trust to the patient's judgment. A druggist has no right to suggest

to a patient who hands him a prescription for Trommer's malt or Fellows' hypophosphites, for instance, that he has some other malt or hypophosphites compound just as good; and at law a druggist who makes such a suggestion would probably be liable for consequences. At all events it is a very evident breach of courtesy and of comity due the prescribing physician.

A dispensing pharmacist, so far as a reputable physician's prescription is concerned, is nothing more nor less than an automatic executive machine, and should keep as mum as an automaton, except when an ignorant physician prescribes a dose to the patient's peril.

If physicians' prescriptions are to be subjected to druggists' suggestions, the wise course for physicians whose prescriptions are likely to go to such druggists is, to guide their patients somewhere else, or dispense their own drugs.

When a physician orders Battle's bromidia or Barrett's or McIntosh's batteries, or Fairchild's pepsin, or Vin Mariana's or Wheeler's tissue phosphates, or Leslie's bedstead, or any other special medicine or appliance, he wants his patient to get just that particular thing, and not the article which is next best in efficacy or just as good in the estimation of the druggist (doctor) whom he has favored with his patronage.

Druggists must call a halt on this substitution or supplementing of their judgment for that of the prescribing physician, or the occupation of such druggists as continue the unjust practice "is gone."

There are too many wide-awake proprietary medicine men with elegant and easily-handled preparations ready for convenient dispensing, in the market, to permit an evil of this kind to be long tolerated by a long-suffering profession.

The profession of studying disease, and prescribing medicine, belongs to the physician; the business of filling his prescription satisfactorily to the physician belongs to the druggist, and it will stay with him only so long and wherever he conducts his business with due regard to the proprieties of the relative situation in which physicians and pharmacists are placed.

Prizes for Essays on Medico-Legal Subjects.—

The Medico-Legal Society of New York announces the following prizes for original essays on any subject within

the domain of Medical Jurisprudence or Forensic Medicine: 1. For the best essay—One Hundred Dollars, to be known as the Elliott F. Shepard Prize. 2. For the second best essay—Seventy-five Dollars. 3. For the third best essay—Fifty Dollars. The prizes to be awarded by a commission, to be named by the President of the society, which will be hereafter announced. Competition will be limited to active, honorary and corresponding members of the society at the time the award is made.

It is intended to make these prizes open to all students of Forensic Medicine throughout the world, as all competitors may apply for membership in the society, which now has active members in most of the American States, in Canada and in many foreign countries. All details of the award will be determined by the Executive Committee of the Medico-Legal Society of New York.

The papers must be sent to the President of the Medico-Legal Society of New York on or before April 1, 1888, or deposited in the post-office where the competitor resides on or before that day. The name of the author of any paper will not be communicated to the committee awarding the prizes. All persons desiring to compete for these prizes will please forward their names and address to the President or Secretary of the Medico-Legal Society of New York. In case the essay is written in a foreign tongue, it should be accompanied by a translation into the English language.

It is hoped that all our members, whether active, honorary or corresponding, will take an interest in this effort to stimulate scientific inquiry and research in questions relating to medical jurisprudence.

Scientific societies in all countries are invited to lay this announcement before their members, and the cooperation of the legal, medical and public press is respectfully solicited in bringing the subject to public attention.

CLARK BELL, President,
57 Broadway, N. Y.

ALBERT BACH, Secretary, 140 Nassau St., N. Y.

The Neurological Section of the Recent International Congress and its Contributions to the literature of medical progress made a most creditable showing, and the section itself was a subject of much inter-

est to the physicians in attendance upon the Congress. Its sessions were daily crowded to overflowing with members of the section and auditors.

It is gratifying to see the interest taken there and being awakened over the world in this keystone and foundation department of medical study.

The time has come when neurology and its subordinate division, psychiatry, cannot be ignored by the physician who would be properly enlightened and work well in any department of medical research or labor, and those in attendance on the last Washington Congress seemed to have fully appreciated the fact by their patronage of the section of psychiatry and neurology.

The alienists of America, and especially President Andrews, of the section, have reason for honest pride and sincere rejoicing at the success of this part of the Congress. Dr. Andrews and all collaborators have our thanks for and congratulations on the good and enduring work achieved.

The following papers were read or contributed: Dr. Judson P. Andrews, "The Distribution and Care of the Insane in the United States;" Dr. Fielding Blandford, of London, "The Treatment of Insanity in the Private Houses and Asylums;" Dr. Hack Tuke, "Modes of Providing for Insane and Idiots in the United States and Great Britain," and on the "*Rapprochement* of American and British Alienists in Regard to the Employment of Mechanical Restraints;" Dr. Henry M. Hurd, of Pontiac, Mich., "The Religious Delusions of the Insane;" Professor Mendel, of Berlin, "The Origin of the Upper Facial Nerve;" Dr. E. A. Homan, of Helsingfors, Finland, "Histological Alterations following Amputation in the Peripheral Nerves, the Spinal Gangliæ and the Marrow;" Dr. Otto, "Nucleus Staining by Analine Dyes;" Dr. J. Langdon Down, of London, "Cases Illustrating the Prow-shaped Cranium with Neurotic Disease;" Dr. George H. Savage, "Syphilis, in its Relations to Insanity;" Dr. Ingram, of Washington, D. C., "Gunshot Wounds of Spinal Cord;" Dr. Daniel Clark, of Toronto, Canada, "Remissions and Intermissions of Insanity;" Dr. Horace Wardner, of Anna, Ill., "Occupation for the Insane;" Dr. Bower, of Bedford, England, "Occupation for Insane in Private Hospitals in England;" Dr. Theo. W. Fisher, "Monomania and its Modern Equivalent;" Dr. Walter Channing, of Brookline, Mass., "The International Classification of Mental Disease;" Dr.

Bannister, of Kankakee, Ill., "Note on the Classification of Insanity;" Dr. C. H. Hughes, of St. Louis, "The True Nature and Definition of Insanity;" Dr. W. L. Schenk, of Boise City, Kansas, "The Relation of State Medicine to Medical Jurisprudence."

The Congress, as a whole, was the largest ever held, and the arrangements to entertain the delegates were very elaborate and successful. Large numbers of medical men from the West and South were in attendance, the whole number attending being stated to be nearly five thousand, though the absence of prominent members of the profession from New York, Boston, Philadelphia and the East generally was noticed, due to the unfortunate circumstances attending the preliminary arrangements of the Congress. *(Continued on page 191.)*

Dr. W. W. Godding on Oinomaniaes and their Treatment.—When Dr. Godding was Superintendent of the Worcester, Massachusetts Hospital for the Insane, he wrote as follows:

Reference to the table of assigned causes will show, that, out of thirty-one hundred and thirty cases admitted since the opening of the hospital, where the cause was known, seven hundred and three were the result of intemperance. * * * * A very small per cent. of these may have been cases of *mania a potu*, a kind of self-limited delirium that gets well or dies in a short time with no need for prolonged hospital treatment. Another somewhat larger per cent. are cases not distinguishable from the ordinary forms of insanity, perhaps often cases of hereditary taint, where a constant use of stimulants to excess has developed the constitutional defect. But, eliminating all these, there still remains by far the largest number, cases where continued inebriety has broken down the moral power; and the brain, long kept unnaturally stimulated, at last gives way, and in a double sense the man is crazy with rum. * * * * A patient of this kind is brought to the hospital. In a few days, the stimulus being withdrawn, the reason clears: sleep and food restore the exhausted nervous system, and the man says he is well. His delusions, if any existed, are gone; his pulse is normal; his sleep is good; he reasons well on any topic, and none clearer than on his unfortunate habit. * * * * Intellectually he is well, and you can detect only one thing lacking, his moral sense; that, in confirmed cases, seems to have burnt out early. * * * * Practically he has recovered from his insanity, and in a world where there was no rum he would remain well. So you can keep him or let him go. If you let him go, the chances are that he will drink again and be back in a month. If you keep him, which, after one or two trials, is perhaps the best thing that can be done, you will probably regret it. In a hospital where labor cannot be compulsory, he never elects to do anything; a life of dissipation predis-

poses to a life of idleness, but to him the idleness without the dissipation is fearful. His freedom from obvious insanity seems to entitle him to a place among the most intelligent and comfortable patients; he takes your best as being his right, and then abuses it; he poisons the minds over which he has an influence, creating dissaffection towards the hospital that detains him. Some slight advantage in education causes him to look down with contempt upon the poor lunatics, as he styles them; he says that his case is not like theirs, that the hospital is no place for him. And I think he is right. * * * * Sane or insane, the confirmed inebriate should have special provision made for him by the laws. Those who are agreed that he should no longer be kept in our present hospitals will differ widely as to what shall be done with him, and it is perhaps hardly my place to discuss it. I only trust that here in Massachusetts, where the Washingtonian Home, with a noble purpose and an unfailing charity, holds out a helping hand to such as have the manhood to help themselves, for that other class who have no manhood left to appeal to, I trust we shall have a practical, not a maudlin, philanthropy; that we shall build for them no castle of indolence, or, having built, make it a paradise for loafers; but that labor, subject to the direction and discretion of a well-informed, judicious medical chief, be made compulsory. One great trouble with our present houses of industry for this class is, that the term of sentence is too short for any lasting good. In this future asylum, or refuge, or rest—call it by what pleasant name you will—make the sentence long, three years at least; perhaps subject to a reduction for good conduct, at the discretion of its board of directors. Locate such an institution on an island, where nothing intoxicating can be obtained, and the liberty of the grounds can be assured; then we should hear less, it may be, about men of gentlemanly instincts with but a single failing, but we should at least hope to learn of some cases of oinomania permanently cured.—October, 1871.

Notice to Asylum Physicians—Wrongs Upon the Insane, from Political Management.—We shall be obliged for practical matter supplied in such form that we may use it before the Civil Service Reform Association, illustrating the wrongs done the insane through direct political control of asylums for the insane. Facts bearing upon and proving the following points:

Incompetency of medical heads and assistant-physicians; Immorality of medical heads or non-medical heads; Insubordination, immorality or cruelty of employes, whom the Superintendent cannot discharge; Evidences of loose management and wrong-doing, due to medical and administrative incompetency, and political allegiance, rather than fealty to society, science, humanity and the profession, on the part of political heads or subordinates.

Infantile Spinal and Cerebral Paralysis.—Dr. R. N. Wolfenden (*Practitioner*, September, 1886) gives the following differential diagnostic table:

	Spinal Paralysis.	Cerebral Paralysis.
Initial stage.	Fever, convulsions, loss of consciousness. These may all fail, and this stage be unnoticed.	The same.
Age.	Paralysis usually begins 1—4, seldom later.	Generally under 4. May occur immediately after birth.
Paralysis.	Monoplegias and paraplegias, seldom hemiplegias.	Hemiplegias commonest, monoplegias sometimes, paraplegia rare.
The nature of paralysis.	Muscles "flail-like," contractures form after long time.	Slight contractures form early, recovery is constant.
Electric reactions.	Faradism strongly reduced. R. D. obtained.	Faradism retained, no R. D.
Sensation.	Unchanged.	Scarcely changed.
Tendon reflexes.	Lost.	Exaggerated.
Temperature and color of the limbs.	Lowered, and limbs look livid and feel cold.	Temperature not lowered, limbs of normal color and warmth.
Inhibition of growth.	Strongly marked.	Not so marked, generally mostly so in upper limb.
Motor affections.	Not present.	Athetosis and epilepsy.
Intelligence.	Unaffected.	Often lost.
Bladder and rectum.	Not affected.	Now and then slightly affected.
Paretic contractures.	Pes varus " valgus " calcaneous. " equinus } and combinations of these.	Generally nothing except equinus spasticus, and contraction of the knee.

Memory and Insanity.—Dr. H. Sutherland (*Jour. of Ment. Science*) says, concerning the incubatory stage of insanity, that—

Loss of memory is a very marked symptom. A patient will remain seated in your consulting room much longer than is necessary, and long after you believe the interview is concluded. He will get up in the night and think it is the morning. He will take three or four hours to dress, owing to his performing some parts of the toilet

more than once, and forgetting that he has done so. He will eat voraciously, or he will neglect to take his food, simply from loss of memory.

It is obvious that this is much too positively put. Memory is often excellent in many cases, even of parietic dementia, and many of the phenomena here described may be due, not to loss of memory, but to abstraction in delusive conceptions. The erroneous idea that loss of memory is a pathognomonic symptom of insanity is altogether too prevalent. Insanity is a perversion, not necessarily a loss of power in special directions. On the contrary, power, through irritation and stimulation, may be intensified. Memory may be stronger and reasoning power more acute in certain directions in insanity than they were in the mental health of the person.

Lectures on Inebriety.—From the January number of the *Journal of Inebriety* we clip the following:

The President of the English Society for the Study of Inebriety, Dr. Norman Kerr, is to give the first course of medical lectures on the Disease of Inebriety and its Treatment, in the hall of the London Medical Society, beginning January 12, 1888. Dr. T. D. Crothers, of Hartford, Conn., has been invited to deliver two lectures on the same topic before the Albany Medical College, January 24 and 25, 1888. These are the first medical lectures on inebriety, and the first efforts to present this subject in connected detail by medical men from a purely scientific standpoint.

We are glad to note this recognition by the profession and the medical schools, of the disease aspect of inebriety, a view distinctively and originally American, dating back to the time of the immortal Dr. Benjamin Rush.

There is, however, an error in the statement that these are the first medical lectures on inebriety, for Benjamin Rush himself, we think, lectured, as well as wrote, on the subject, and our own school, the St. Louis Medical College, has had lectures on inebriety as a disease, as contradistinguished from criminal drunkenness, for the past ten years.

Medico-Legal Society of New York.—The last November meeting of this Society was an unusually interesting one, "The Medical Jurisprudence of Inebriety" being the subject of discussion. Papers on this topic were read by Dr. Norman Kerr, President of the English

Society, of London; Dr. Joseph Parrish, President of the American Society, of New Jersey; Dr. T. D. Crothers, Editor of the *Journal of Inebriety*, of Hartford, Conn.; Dr. Wright, of Bellefontaine, Ohio; Dr. E. C. Mann, of Brooklyn; Dr. Chas. H. Hughes, of St. Louis; Anthony R. Dyett, Esq., of New York; Clark Bell, Esq., of New York, and Wm. J. Mann, Esq., of New York, and others. An interesting discussion followed the reading of these papers, two of which appear in the present issue.

The Medico-Legal Society, New York.—The February meeting will be held at Hotel Buckingham, on Wednesday, February 8, 1888, at eight o'clock sharp, at which you are invited to be present.

Order.—1, "Best Method of Executing Criminals," by J. Blount Bleyer, M. D.; 2, "The Hypnotic Trance and Kindred Phenomena," with practical experiments, by Prof. E. P. Thwing, M. D.; 3, The "Menopause in Relation to Insanity," by T. R. Buckham, M. D., Flint, Mich.; 4, "The Prognosis of Pelvic Cellulitis," by W. Thornton Parker, M. D., Medical Examiner, Newport, R. I.

Members of both professions, and all persons interested in the science, will be welcome.

By order of the President,

C. B. AUGUSTINE, Asst. Secretary.

Cascara Sagrada has now been so thoroughly tried that we can, with confidence, commend its merits to our many foreign readers (home readers know all about it) as an agreeable and efficient vegetable laxative in chronic atonic constipation. It can be administered in many compact and agreeable forms and combinations and, in our opinion, is therapeutically preferable to rhubarb, jalap, podophyllin or other cathartics, for continuous laxative purposes, more agreeable to the patient, and quite as efficient as any.

Dr. J. S. Butler, of Hartford, so long the Superintendent of the Connecticut Retreat for the Insane, and for many years identified with the work of such asylums, is using the closing years of his life in presenting some of the results of his long experience, as his recent treatise on "The Curability of the Insane" (G. P. Putnam's Sons, 1887), shows he early advocated a separation of the chronic insane from the more acute cases, and insisted upon individualism in the care of the insane.

The Barrett Galvanic Battery.—This has given us entire satisfaction, especially for cephalic galvanization. Its current is unobjectionable, and it is less trouble than any galvanic battery we have ever used. It can be carried anywhere, and is always ready for use. It requires no attention from the physician.

Prof. Wm. C. Wile has severed his connection with the Medico-Chirurgical College and the *Register* of Philadelphia, and made new business and social connections in Danbury, Connecticut.

We hope his new relations will prove a satisfactory *connect-t'-cut* no more.

The International Congress (Continued).—The other papers before the Neurological Section were:

"The Relation of Syphilis to General Paralysis," by William Julius Mickle, M. R. C. S., London; "Syphilis and Its Relation to Insanity," by Dr. R. B. Mitchell; "Classification of Insanity," by H. M. Bannister, M. D., of Kankakee, Ills.; "Remarks on the Ætiology and Pathology of Thomsen's Disease," with Report of a Case, by Harold M. Moyer, M. D., Chicago; "Miliary Aneurismal Diseases—Deformity of the Brain," by E. C. Spitzka, M. D., New York; "Obscure Forms of Epilepsy," with Cases, by Carlos F. McDonald, M. D., Auburn, New York; "General Paralysis in Dogs," by Megalhaes Lemos, M. D., Oporto, Portugal; "The Basal Ganglia of the Brain as Centers of Psychic and Functional Power," by Daniel Clark, M. D., of Toronto, Canada; "Cerebral Function," etc., by Dr. O. Everts, Cincinnati; "Alcohol in the Organism," by W. Hutson Ford, M. D., St. Louis.

The Section on Gynecology, and other sections, had valuable neurological contributions. On the whole, therefore, neurological science was well represented, and psychiatry and neurology filled a more prominent place in the late than in any preceding International Congress.

The sections on Diseases of Children and Physiology presented also valuable contributions to Neurological Medicine, among them the papers on:

"Hallucinations in Young Children," by Dr. E. Bouchut, of Paris; "Infantile Convulsions in Connection with After-Neurotic Tendencies," by J. A. Coutts, of London; "Some Observations on Headaches in Children, and their Relation to Mental Training," by Dr. W. H. Day, of London; "Cerebral Irritation in Children," by Dr. Jules Simon, of Paris.

"On the Necessity for a Modification of Certain Physiological Doctrines Regarding the Inter-Relations of Nerve and Muscle," by Thomas W. Poole, M. D., of Lindsay, Ontario; "Trophic Influence of the Nervous System," by Dr. Thomas O. Summers, of Jacksonville, Florida.

IN MEMORIAM.

ACHILLE FOVILLE.—France mourns another distinguished alienist gone to his rest. M. Achille Foville, the worthy son of a noble sire, who, following in the footsteps of his illustrious father, has filled for so long responsible positions in public psychiatry, is dead. While his friends were rejoicing at his recuperation from the prostration of last July, and hopeful of permanent recovery and greater usefulness to psychological medicine, he passed away to join the caravan of the many good and the great alienists of France who have gone before him. His malady was chronic Bright's disease, which even the balmy skies of Southern France, whither he had repaired, could not cure, M. Motet, in a letter to the *Journal of Mental Science*, referring to his death, only utters the sad sentiments of appreciation felt on this side of the Atlantic as well as in Great Britain: "In his death mental medicine has sustained a severe loss. Though a son of France, he was cosmopolitan in his heart and endeavors for psychiatry and the insane."

J. M. RAMAER, M. D.—Dr. F. M. Cowan, in the *Journal of Mental Science*, pays the following just tribute to the distinguished Dutch neurological savant, deceased:

Psychological Medicine in Holland received a severe blow on the 2nd of November, 1887, by the decease of Dr. J. M. Ramaer.

He was born on the 20th of April, 1817, at Bois le Duc, and attended the grammar school at that place. His school-fellows say he was one of the best scholars, and that he displayed a great aptness in mastering difficulties. He afterwards studied medicine at Utrecht, where he was a pupil of Professor Schroeder van der Kolk. His medical degree was taken at Groningen, to which place his parents moved after a few years. The degree of M. D. was conferred upon him after his writing and defending a dissertation: "De *Æthiopica generis humani varietate*."

After leaving the University of Groningen he set out on a tour to the schools of Vienna, Munich and Paris, previously to his settling as a physician at Rotterdam, in 1840.

The lessons of Professor van der Kolk caused him to make nervous and mental diseases his favorite study, and it was at the recommendation of this great anatomist and neurologist that Ramaer was appointed medical superintendent to the lunatic asylum at Zutphen. He was appointed in 1841 and entered upon his duties on January 18th, 1842.

It was in 1841 that the first law was passed in the Netherlands which greatly improved the lot of the insane, and it shows the great trust which

Van der Kolk, the *auctor intellectualis* of the law, put in Ramaer, then only twenty-four years old. His subsequent career showed that the trust was well deserved. He devoted his energy and powers to the Zutphen Asylum till 1863, when he was appointed medical superintendent of the asylum at Delft. He stayed at Delft six years, and on the 1st of July, 1869, he moved to the Hague, where he settled as physician for nervous and mental diseases. The Board of Governors of the Delft Asylum, wishing to profit by his experience and learning, appointed him consulting physician to their asylum. This honorable post he resigned in 1872, having obtained a call from the Home Office to be inspector of lunatic asylums.

It is only natural that a law, however excellent, should have many deficiencies, which are only discovered after such a law has been in existence for some time. And so it was with the law passed in 1841. When Ramaer came into authority he kept urging the necessity that the old law should be recalled, and another and better one be substituted. His endeavors were successful, and on the 1st of October, 1884, he had the satisfaction of seeing the present law of lunacy issued.

It was during his stay at Zutphen that he started the plan of uniting the different medical associations of different places into one general medical society, and it is in great part owing to his increasing endeavors and unfailing energy that he saw his favorite plan improve, and when the general medical association celebrated its twenty-fifth anniversary, Ramaer had the great satisfaction of delivering the presidential address.

Another medical society gratefully recognizes him as its founder, viz. the Psychological Society, of which he resigned the chair when appointed to be Inspector of Lunacy.

The King decorated him with the Order of the Lion, and its device "Virtus nobilitat," was well placed on his noble breast.

He was an honorary member of several learned societies, one of which was the Medico-Psychological Association of England. He was the author of several papers relating to our branch of medicine.

If it may be said that he tasted the sweets of life, still he suffered from bereavements. He lost an only daughter, a son (a promising young barrister), and a well-beloved wife. An indefatigable worker in his asylum and his study he was a kind father and cheerful friend, and those who enjoyed his friendship and hospitality all agree in their praises of his conversational powers and the vast amount of his general information.

He encouraged work, and stimulated young physicians to search the vast field before them.

His death was occasioned by a comparatively trifling cause. While cutting a corn his knife slipped, and he received a small wound, which caused him little, if any pain. Unfortunately he neglected this small scratch, and continued walking. Very soon after an abscess formed, and, notwithstanding the best nursing and the most stringent antiseptic treatment, sloughing set in, and in a few weeks caused his death.

A good and a noble man has departed this life. Well may his family weep for him, but let those he left behind find consolation in the consciousness that the deceased bore a name which was honored and respected throughout the land.

REVIEWS, BOOK NOTICES, &c.

RECHERCHES ANATOMIQUES ET CLINIQUES SUR LE FAISCEAU SENSITIF, ET LES TROUBLES DE LA SENSIBILITE DANS LES LESIONS DU CERVEAU. Par le Dr. Gilbert Ballet, p. 200. Paris: Aux Bureaux du "Progrès Médical."

Before the lamented Jewell died, he gave to the readers of his favorite journal, the *Neurological Review*, that promising but prematurely dead child of his fertile brain, this classical review of M. Gilbert Ballet's book, and in lieu of a notice by the ALIENIST, and in memoriam of Dr. Jewell's loving labor for us all, we give his review entire. We know of no better way to keep the memory of our co-laborers green than to place before us now and then their work, and see them again and again as they were wont to appear before us in the habiliments of their accustomed and favorite work. The work of the worthy dead live after them:

"Every trustworthy acquisition, whether anatomical or physiological, relating to the interior structure and modes of action of the brain, is worthy of distinct note, even though of relatively subordinate importance. Because it contains what clearly appears to be a contribution to our knowledge of the disposition of fiber systems in the white substance of the brain, is the chief reason why we notice, at this somewhat late date, the interesting monograph, the title of which is given above."

"Another reason why we call attention to the work of Dr. Ballet is because it does not seem to have attracted the attention that it deserves among writers in this country, on this class of subjects."

"The work consists essentially of a brief description of the white substance of the brain and of certain methods employed for determining, not only its structure, but more particularly the modes of distribution of the sensitive bundles of its fibers. Dr. Ballet limited himself to an investigation of the bundles of fibers just mentioned, which, passing up in the external aspect of the crus of the cerebrum, continue on up through the internal capsule to mix with the white substance, filling the interior of the cerebral hemispheres. After it has risen out of and above the internal capsule, into the centrum ovale, the great sensitive bundle of fibers becomes the object of Dr. Ballet's researches. He accepts up to this point, without serious qualification, the findings of previous anatomists. At this point he employs his method for determining not only the anatomical composition and limits of the sensitive tracts as a whole, at the level named, but in tracing the course of its different divisions as they separate, bundle after bundle, from the main mass, until they are finally distributed to different regions of the cortex of the brain."

"Dr. Ballet seems to have been inspired and in a measure guided by M. Brissaud. His method consists in carefully removing the peduncles and cerebellum from the healthy brain by section. The pia is removed from the hemispheres, and with it as much as is conveniently practicable, of the cortex. The brain thus prepared, is placed in a weak solution of bichro-

mate of potash. In this way it is treated for several days, or until the white substance of the hemispheres is thoroughly saturated with the solution named. The liquid is changed daily for three or four days, when the brain is placed in a saturated solution of the bichromate, in which it is permitted to remain indefinitely. Every ten or fifteen days, however, the liquid is renewed, until the brain is thoroughly hardened. Perpendicular sections are then made in a transverse direction from the vertex to the base, so that the most anterior are some distance forward of the anterior edge of the great bundle of sensitive fibers occupying the posterior third of the internal capsule. Other sections are made at slight distances apart in the advance toward the posterior extremities of the hemispheres. Other sections are made through the same region horizontally, and from above, downward.

"These having been made, a study is begun that reveals the following important fact, not new, it is true, so far as *the method* is concerned, but new in its application to the part of the brain in question, as has been done by Dr. Ballet. The section of fibers that pass in such direction that the ends of the axis cylinders of the nerve fibers with their investments are exposed to view, are much darker in color than are those fibers that lie parallel to, and that have been simply separated by the section, and hence present to the eye their side, or longitudinal aspect. In these ways has Dr. Ballet been able to follow various bundles to very considerable distances from their emergence into the interior of the hemisphere from the internal capsule toward their final destinations in the gray matter of the brain. By making sections in another plane, he has been able to follow the direction taken by other bundles. At first the fibers occupy a more or less distinct and pretty well marked space. In following them upward, or in any other direction from the internal capsule, the bundles gradually diminish in size their constituent fiber bundles, separating one from the others, until at last all fade out, but not until a clear idea is obtained as to the particular cortical fields to which many, at least, of the bundles go. Such, in brief, is the method of our author.

"We can do no better, perhaps, than to abstract from this highly interesting monograph the author's conclusions, in which his results are summarized. No attempt is here made to adhere closely to the language of the author.

"1. The sensitive band or bundle which ascends in the external portion of the cerebral peduncle, penetrates the interior of the hemisphere by the posterior segment of the internal capsule, the posterior one-third of which it occupies.

"2. It receives almost immediately an accession of fibers emanating from the optic thalamus and from the geniculate bodies, which mass of new fibers is joined to the direct bundles from the peduncle, and immediately becomes intimately mixed with the constitutive elements of the latter.

"3. Among the sensitive fibers some pass up almost directly to the cortex of the frontal and ascending parietal convolutions. Others bend backward, constituting, properly speaking, the great sensitive band or bundle quite voluminous. It is directed horizontally backward toward the point of the occipital lobe. As this great bundle advances, many fibers are

dropped off from its periphery to terminate in various convolutions by the way, some fibers going apparently from one bundle to nearly all the convolutions in the posterior part of the brain, such as the parietal, occipital, temporo-sphenoidal, etc.

"4. Destructive lesions of the posterior part of the internal capsule (*carrefour sensitif*) are betrayed, as was established long since, by complete sensitivo-sensorial hemianæsthesia.

"5. It has been also established that the fibers that lie nearest the lenticular nucleus involve a more or less complete loss of general sensibility with comparative integrity of the special senses.

"6. It is probable that the fibers that occupy the most internal part of this great sensitive bundle at the level of the capsule are joined with the optic radiations already mentioned.

"7. Immediately after rising above the level of the *carrefour sensitif*, the fibers in the great sensitive bundle that have been more or less distinct anatomically in bundles in so far as they are subservient to different forms of sensibility, lose their independence. Those connected with different sense organs on the one hand, and with different regions of the cortex on the other, mix up together intimately, and pass in such manner as to make it impossible to follow them to their final destination in the vast cortical territory that is the seat of sensibility.

"8. This cortical territory is not divisible into distinct cortical centers for each species of sensibility. Different cerebral convolutions have been each destroyed separately, without any complete and permanent loss of sensibility necessarily following.

"9. Though there is a sensitive zone in the cortex, there are no sensitive centers.

"10. This zone comprehends all that part of the cerebral cortex situated behind the bases of the frontal convolutions.

"11. It includes the motor zone. From this it results that the zone in question may be legitimately called the 'sensitivo-motor.' The convolutions situated behind the frontal and ascending parietal are exclusively sensitive.

"12. By consequence of the great extent of the sensitive zone, it is difficult to conceive of a cortical lesion sufficiently extended to cause a complete "sensitivo-sensorial" hemianæsthesia.

"13. But in those cases of hysteria in which profound cerebral disturbances occur, the nature of which are yet to be determined, we realize a 'sensitivo-sensorial' hemianæsthesia without fixed material lesion."

ABUSE OF ALCOHOLICS BY THE HEALTHY. By Stanford E. Chaillé, A. M., M. D., Professor in Tulane University, La.

The abuse of alcoholics is not only a social question, but it is also a medical one, and Dr. Chaillé has written a timely and able article upon the subject. The share which alcoholic liquors have in the production of disease is very well stated in the author's opening sentence, which is as follows: "While impure air, befouled as it so often is by ordinary pollutions, as also by the poisons of specific diseases, holds the first place among the causes of avoidable disease and death, the second place probably belongs to the abuse of alcoholics."

That stimulants do not stimulate, as ordinarily understood, is a fact well known to medical men. On this point Prof. Chaillé aptly says: "In medicine, alcoholics are termed stimulants, and it unfortunately results that most men, and even some doctors, think that this means that alcoholics give a man strength. One of the highest medical authorities correctly defines stimulants to be medicines which seem to increase our vital powers for the time being, and thus give us feelings of greater strength and comfort. Now alcoholics do seem to give a man strength, and so does a spur seem to give a horse strength, but in fact alcoholics no more give strength than the spur. The spur irritates the horse to use, and therefore to show for a moment more of the strength which he already had than he would otherwise have done; but if a good horse, the more he is irritated by the spur the sooner his strength will be exhausted. Alcoholics affect a healthy man as the spur does a good horse; however, the alcoholic spur usually exhausts a man's strength much sooner than the iron spur exhausts a horse. The common belief that alcoholics give a man strength is as groundless as would be the belief that strychnine gives strength because it produces violent convulsions, or the belief that irritation of a chicken's spinal cord by wringing its neck, gives strength to its jumping, headless body."

Dr. Chaillé holds that alcohol has no food value, and calls attention to the fact that as it has the same chemical elements as sugar, and that if it acted as a food, it ought to make heat and fat, yet the fat that results from its use is unhealthy, and that it is accompanied by degeneration. That alcohol decreases the temperature is a well known fact, and its use has been found to be injurious to persons exposed to cold. Dr. Carpenter has also shown that it diminishes excretion of urea, carbonic acid and bile, that is, it stops up the waste pipes of the system and retains effete materials in the blood. The writer says, on page 11: "The inquiry now arises, how does alcohol increase the flow of blood to the skin, and probably to the brain? The quantity of blood in a part varies with the caliber of its blood tubes, and variations of caliber depend upon the action of the nerves (vaso-motors) of these tubes. Whether these nerves be paralyzed or inhibited, the tubes relax and thereby enlarge their caliber, thus securing an increased flow of blood through them. The heart, relieved by these relaxed tubes from the resistance previously given by their contraction, beats quicker, and at times even stronger, just as the mainspring of a watch quickens its action when the ordinary resistance to it is removed. Hence, it now seems to the physiologist that even the increased action of the heart is brought about indirectly by a paralysis, or a benumbing of nerve force. It is certain that alcohol forces the heart to do an immense amount of useless and exhausting extra work; and I doubt not that this is due either indirectly to nerve paralysis, or directly to a poisonous irritation of the nerves of the heart." The writer shows that the alcoholic poison weakens the higher faculties and lets the lower faculties run riot with unrestraint.

The doctor offers some interesting vital statistics. He refers to certain benevolent unions composed of members who are total abstainers, and of others composed of members who are not abstainers. It is shown that among those who do not abstain, death and sickness, and the expenses for both, are more than twice as great as among those who are total abstainers.

He refers also to the experiences of a hospital in which alcoholics cost 83 cents per head; the quantity was diminished so that the cost was 23 cents per head, and the death rate was thereby reduced 35 per cent.

This pamphlet should be widely circulated.

J. H. M.

INSANITY AND ALLIED NEUROSES ; Practical and Clinical. By Geo. H. Savage, M. D., M. R. C. P., Physician and Superintendent at Bethlem Royal Hospital.

This is one of the most practical works that have been written on insanity. Dr. Savage, from his long experience as a superintendent of an insane hospital, and his acquirements as a writer, is specially qualified to perform such a task, and we believe the universal verdict will be that he has made a valuable and permanent contribution to the literature of insanity. In classification, he gives that of the London College of Physicians, and also his own, which is based upon the mental symptoms, and it does not differ materially from that used by other English authors.

In the chapter on Causation he enumerates the usual list of causes, and they are treated of in a fresh and interesting manner.

An important point in the causation of insanity is well stated in the following paragraph :

"Insanity is comparatively rarely produced by a single shock or emotion. Just as the stone is worn by the constant dropping, so the mind is upset by the recurrences of worry, and worry, not work, is the cause of the break-down of farmers. No amount of foresight, or industry, will save them from the effects of disastrous years. And it seems that the inability to stave off misfortune has a particularly depressing effect."

This statement, which is made with special reference to insanity occurring in farmers, is equally applicable to the majority of people who become insane. The more one sees of insanity the more evident it becomes that the disorder seldom results from any one particular cause, but that it is usually the culmination of a series of unfavorable conditions that have operated for a considerable period of time. The author's remarks upon inheritance, though brief, are practical, being evidently the result of accurate and extensive observation. In answer to Dr. Bucknill's question, why it is that so many children of insane persons escape insanity? the author very pertinently remarks, "we have to remember that the child is not only the offspring of his father and his mother, but he is the last of a long procession, and that he is the representative of their many peculiarities and aptitudes, and it would be impossible for him to have them all, as some would be contradictories." In regard to intemperance as a factor in the production of insanity the author says: "It acts upon the brain directly as a poison; it acts indirectly upon the brain by impairing nutrition and interfering with depuration of the blood; it acts morally by lowering the social condition of the majority of those who indulge to excess, and indirectly it leads to injuries; exposure to cold and similar damaging influences."

Dr. Savage is not inclined to place much stress upon our ability to discover the exact pathology of insanity, and in closing the chapter on mania, he says: "Before concluding this section, I must give as my experience, that persons may die of acute mania, and yet their bodies may exhibit

nothing which a skilled pathologist would at present, at least, be able to say was sufficient to destroy life."

The chapter on Idiocy and Imbecility is excellent. He devotes a chapter to the Responsibility of Lunatics, which, though very brief, is good.

In treating of "Testamentary Capacity," the author seems to concede that an insane person can make a valid will, provided the will is a just one. This is the view that the courts of this country and of England seem now inclined to take, the tendency being to consider the act rather than the individual. A perfectly just will, made by an insane person, would probably be upheld by a court in spite of the insanity of the testator.

Dr. Savage can be congratulated upon having written a book on insanity that is valuable to the specialist, practitioner and student, and easily comprehensible to the untechnical reader, and it will add to the high reputation which he already has.

SYPHILIS OF THE NERVOUS SYSTEM, AND ITS TREATMENT. By Landon Carter Gray, M. D., Professor of Mental and Nervous Diseases in the New York Polyclinic.

Some idea of medical interest on this subject, may be obtained from the following curious comparison which the author makes: Professor Max Müller, the well-known philologist, informs us that the whole of the Sanscrit literature, running, as he expresses it, "like a high mountain-path of literature through the whole history of India, and extending over a period of three or four thousand years, is contained in about 10,000 manuscripts"—more, the same authority estimates, than the whole classical literature of Greece and Italy put together. I have been able to count up some 500 different articles that have been written on the subject of syphilis in the last thirty years, and there are probably many more. This is one-twentieth of the whole Sanscrit literature, or of the combined classical literature of Italy and Greece; and, therefore, in order that the literature of this one subject should equal these great national literatures, it would only take the time of about 600 years, or one-seventh to one-fifth of the time of the Sanscrit writings.

The author states the concurrent opinions of neurologists as to the frequent obscurity of initial signs in nervous syphilis as follows: Syphilis of the nervous system varies essentially from the syphilis about which the great syphilographers of France, England, and America have written so voluminously, because the phenomena of the disease which they described have been almost entirely confined to the cutaneous surface of the body. When this malady, however, affects the nervous centers and their peripheral appendages, it usually, I am prepared to say, has not been marked in its cutaneous manifestations. Most of the cases I have had the fortune to see had this peculiarity. At the outset, therefore, we are met with one great difficulty, which does not bar the way of the dermatologist—we are deprived of the diagnostic guidance of a group of symptoms which have been carefully studied for many years; and in their place no one has as yet suggested an equally pathognomonic group of nervous symptoms. Unguided by the tell-tale signs upon the exterior of the body, the history of the initial lesion may, as is probably well known to most of you, become very obscure. The primary sore being usually very slight, it may very easily

be overlooked, even by those who are in search of it. The infection may come through the husband to the wife, innocently, too, so far as the latter is concerned. Not long ago I heard a lady telling some friends how she had been afflicted with an obstinate headache and subsequent inflammation of the eyes. Now, it so happened that this lady's husband had died a short while before of intracranial syphilis, and on going to her attending physician, I found that he was entirely ignorant of the etiology of his patient's symptoms. The infection may also come through a surgical operation, as is probably known to you; for I suppose that there are very few communities of any size in which physicians cannot be found who have infected themselves in this manner. Or the infection may come through a lesion innocently acquired about the buccal cavity, and even, perhaps, through articles of clothing. Infection through heredity is of no small account. For these different reasons, it may readily occur that many individuals may be entirely unaware of the disease of which they are the bearers. Add to these sources of error the tendency to concealment which so often actuates patients. Glandular indurations, exostosis, in hereditary syphilis the peculiar teeth described by Hutchinson, and the record of many miscarriages and dead births—all these latter incidents may greatly assist us when they are present, which, unfortunately, they are not in a number of cases of nervous syphilis.

THE INCREASE OF THE INSANE IN THE STATE OF NEW YORK, AND SOME PROBLEMS CONNECTED WITH THEIR PUBLIC CARE. By William D. Granger, M. D., First Assistant-Physician, Buffalo State Asylum, Buffalo, N. Y.

This paper states that from October 1st, 1880, to October 1st, 1886, there has been an increase of 4,001 insane persons in the various asylums in the State of New York, or an average of 666 yearly. The increase for 1886 was 831. In 1870 there were 5,623 insane persons in our State, county, city and private asylums; in 1880 there were 9,537, and in 1886 they had increased to 13,538. But a small part of these are supported at private expense; they are mostly a public charge. The same rate of increase would give 16,202 to be cared for in 1890, and 22,862 in 1900, and makes the remarkable statement that the insane are increasing in a more rapid ratio than the population of New York.

It is but natural that the author should exclaim: "What a task the State has before it in caring for this class of its dependent citizens!"

The causes for this increase are set forth in the following propositions:

1. The large number of foreigners coming into our State that are either insane or possess in themselves or their first generation all the essential elements to produce the disease.
2. The prolonged life of the chronic insane, due to their improved care in the many asylums of the State.
3. The improper and delayed treatment in too many of the county asylums, or in homes for the insane, during the acute and curable stage.
4. The increase of asylums and their nearness to the people make them more used.

The author gives the following review of the history of the State in caring for its insane:

The asylum at Utica was opened in 1843. Prior to that time the public insane were confined in poor-houses, jails, and the lunatic department of the New York Hospital. As the Utica Asylum had a capacity for but six hundred, and was soon full, and as the admissions soon rose to over four hundred a year, the chronic patients were sent back to their respective county poor-houses. By special statute, Kings and Monroe counties are allowed to care for all their insane.

In 1863, Dr. Sylvester D. Willard was appointed a State Commissioner to inquire into the condition and care of the insane in the poor-houses. It was found to be most wretched, and in consequence of his report an act was passed establishing an asylum for the care of the chronic insane called after him, the Willard Asylum.

This act required that all of the indigent and pauper insane should be sent to State asylums; the acute and curable to go to hospitals provided for their special treatment, and the chronic insane to be sent to Willard. It was hoped that all the insane would be removed from county houses, with the exception of New York, Kings, and Monroe counties.

In 1870 there were 1,326 insane in the poor-houses; in 1886 there were 2,144.

Many other subjects of local and general interest are discussed in this paper, for which we have not space.

NURSING REFORM FOR THE INSANE. By Edward Cowles, M. D., Superintendent of the McLean Asylum for the Insane, Somerville, Mass.

This is a timely and valuable *brochure* on this important subject. We regret that we can only give the author's conclusions:

"There are conservative and intelligent physicians and surgeons who deprecate what they regard as the injudicious ideas of certain promoters of these schools, which beget too much of the masquerading of 'higher motives,' and the 'woman's mission.' It is not likely that this will amount to a serious evil; in fact the tendency has been to resolve the sensational elements, at first not uncommon, into the plain common sense of simple good motives, and good conduct, and good work, in the seeking for an honest and respectable livelihood. It was a timely caution, however, recently given by an eminent surgeon, against training the woman so that she becomes a sort of hybrid, which is neither nurse nor doctor. In the beginning of a school, a few nurses, who know how to do acceptable work, with no parade nor nonsense, will do more to help on the cause, outside and inside of the asylums, than anything else. Of our graduates we should be able to be content in saying, 'By their works ye shall know them and us.' At the McLean Asylum the nurses are not taught to write theses and the like; they are quietly handed their diplomas when they are due, and there is rigid avoidance of promoting any other spirit than that of aiming at modest, quiet, unobtrusive devotion to honest work. In this we but imitate what is really the aim of the general hospital schools which have been established long enough to settle down to the plain methods of solid business!

The importance of this nursing reform for the insane is not yet half realized. The keen psychological interest an intelligent nurse will take (when taught to do it), in the mental operations of insane patient, is some-

thing beyond my most sanguine expectations. This puts a power into our hands for the moral treatment of our patients that opens wide possibilities in promoting their comfort and cure. One must believe this when he finds his nurses methodically and intelligently fitting their manner and speech to different patients, and with womanly gentleness, as well as with an effectiveness that comes from an almost unconscious knowledge (so to speak) of power to manage the varying mental states of the insane. The acute intuition of women, when trained to this work becomes a most valuable instrument in our hands.

It is not the least of the advantages of this system, that it develops the personal relations between the doctors and the nurses. One cannot meet his people, even somewhat formally in the lecture-room, every week for a series of months without being more keenly moved by a sympathetic interest in each of them,—in their troubles, their good efforts, and attainments. They discover this feeling, of course, and there is soon a community of interest, a unity of purpose, and a mutual confidence that brings good to the common cause. Were no "graduates" to remain in the asylums, the value and comforts of this system would be so great, in the current benefit of carrying it on, that once appreciated, no asylum superintendent would be deprived of it.

Finally: get ready before beginning; begin rightly; go slowly; do the work thoroughly; and there will surely be good results."

Dr. Cowles has our thanks for the accompanying beautiful composite photograph of a trained nurse. The picture is as beautiful as the theme of the *brochure* before us. The work of the trained nurse impresses itself favorably on her face. By her benevolent face as well as her work she is known.

ON ARRESTED CEREBRAL DEVELOPMENT, WITH SPECIAL REFERENCE TO ITS CORTICAL PATHOLOGY. By B. Sachs, M. D., Instructor in Mental and Nervous Diseases at the N. Y. Polyclinic; Clinical Assistant to the Chair of Nervous Diseases, College of Physicians and Surgeons, New York.

While our knowledge of the pathological substratum of the various forms of mental derangement continues, as it confessedly is, so very imperfect, contributions such as this one of Dr. Sachs' must be welcomed as valuable additions to our store of information.

The author in his search through the entire brain came across no more than half a dozen, if as many, pyramid cells of anything like normal appearance. The fewest large and small pyramid cells showed well-defined processes. The contours were rounded, and the cell substance exhibits every possible change of its protoplasmatic substance. In some there were a distinct nucleus and nucleolus, surrounded by a detritus-like mass; in many the nucleus and nucleolus were entirely wanting.

There was no evidence of previous encephalitic process; no infiltration around the blood vessels; in fact, no changes in any of the blood-vessels of the cortex.

A simple change affecting the cells, and possibly the white fibers only, and the question remains to be decided whether there is mere arrest of development, or arrested development resulting from inflammatory process.

There was no evidence of distinct degenerative changes in the cells.

There were no gross changes such as are frequently held responsible for insufficient development: no evidence of hydrocephalus internus, of a general or a multiple tuberculous sclerosis; no traces of a preceding encephalitis.

The author therefore concludes that, "We have here an agenetic condition pure and simple, affecting the highest nerve elements. As to the cause of this agenetic condition, I am not willing to speculate. I repeat that syphilis is excluded, at least not proved, that there is strong hereditary predisposition to mental troubles, and that there is the etiological factor of traumatism in the case. As the foetal circulation is easily affected by the slightest disturbances, and the proper nutrition of the most highly differentiated organ of the body may in this way have become impaired, we cannot afford to overlook the factor of traumatism."

DIE MORPHIUMSUCHT UND IHRE BEHANDLUNG von Dr. Albrecht Erlennmeyer. Dritte vermehrte und verbesserte Auflage. Mit 22 in den Text gedruckten Holzschnitten.

This is a very elaborate and complete treatise of four hundred and sixty-three pages by a master hand in the portraiture of clinical psychiatry, its author being well-known to the readers of the *ALIENIST AND NEUROLOGIST*, and to the profession of his own country (especially, as one of the most accomplished of asylum superintendents. His opportunities for clinical observation in the line of the treatise before us are probably as good as those of any clinician in Germany, or in any other country.

The author draws the line, as all true observers must, between the opium toxæmia and opium deprivation, the insanity of opium and the delirium of its sudden withdrawal—the tremors, the diarrhœa and the pains of sudden abstinence are well portrayed, and Levenstein's sudden weaning process is very properly discountenanced on the very good ground of humanity and safety to the patients. The mental condition of the advanced opium slave is very aptly compared by the author, we think, to a phase of affective or moral insanity, and the delirium of sudden withdrawal is not inaptly compared to alcoholic delirium tremens. In fact it is often as much the delirium of alcohol as of opium deprivation for some alcoholic tincture of the drug is not infrequently the medicine whose daily use is missed by the patient.

The author from his large experience joins neurologists on this side of the great water in sounding a timely note of warning against the insidious and often dangerous substitutive cocaine habit, and though he recognizes the mixed cases of cocaine and opium toxæmia, he has not failed to discover that it may and does cause toxic enslavement of the nervous system which reveals only the chains of erythoxylon coca, though the opium habit may first have forged the tyrannous links that hopelessly bind the victim.

The author's treatment is conducted on those general principles already familiar to the practical neurologist, coupled with that judicious restraint and surveillance dictated by all experience of the feeble will and

treacherous character as to voluntary discontinuance of their unfortunate habits.

The author does not add much to our knowledge of the pathology of the opium habit.

THE ETIOLOGY AND MECHANISM OF ASTHMA. By William C. Glasgow, M. D., Professor of Diseases of the Chest and Throat in the St. Louis Post-Graduate School of Medicine; Adjunct Professor of Theory and Practice in the St. Louis Medical College.

This is the subject of a well sustained and historically as well as clinically instructive paper which appeared in the *American Journal of the Medical Sciences* for July, 1887. The author plausibly and logically maintains that "asthma is a disorder of vascular irritability; that the paroxysm is directly due to partial occlusion or cylindrical narrowing of the lumen of the bronchi through the swelling of the bronchial mucous membrane; that this swelling is caused by a vasomotor spasm of the arterioles with a saturation of the tissues by the liquor sanguinis; this condition is accompanied by a general high blood pressure."

With this theory he finds a complete explanation of all the physical signs of asthma. "We see," he says, "the possibility of the rapid changes of physical signs observed during the paroxysm, and we have in its support the physiological action of all the drugs which experience proves to be of value in allaying the paroxysm—the nitrite of amyl, morphia, chloral, lobelia and iodide of potash, in their action allay the spasm at the same time that they tend to reduce general blood pressure; whilst drugs, like the bromides, prove of little value in breaking the paroxysms when once in force, although they are serviceable in preventing a recurrence.

This theory of arteriole dilatation he maintains is directly contradictory to the acknowledged physiological effect of the drugs which are generally recognized as most useful in allaying the paroxysm; the nitrites, chloral and morphia are all known as relaxants and anti-spasmodics, and their use could only increase the distress if the dyspnoea was due to a vasomotor dilatation of the vessels of the bronchial mucous membrane. The action of chloral and morphine could be explained by their effect on the nerve-centers; but the efficacy of the nitrites finds here no support. The physiological action of the venous blood and carbonic acid on the arterioles and their actual effect on asthma negative the existence of vasomotor dilatation of the arterioles as a cause of the paroxysm. Ludwig and Severini have shown that venous blood, when circulated for a length of time, causes the vessels to dilate, and that a large amount of carbonic acid in the blood causes a dilatation of the vessels. The natural sequence of an asthmatic paroxysm is extreme venosity of the blood, with an accumulation of carbonic acid through its imperfect aëration. These conditions in reality existing to such an extreme degree in the asthmatic paroxysm, would simply increase the paroxysm if the disturbance was due to vasomotor paralysis of the vessels; whilst, in fact, we find them to be essential elements in the natural cessation of the attack.

The author discusses with singular clearness all moot points.

OXYGEN AS A THERAPEUTIC AGENT.

This is a plain, practical and instructive presentation of its germicidal

and healing qualities; its adaptability to the treatment of consumption and pulmonary and throat troubles generally, and its place in surgery. With a report of cases treated in the practice of Dr. Rothwell, the whole being the substance of an address before the Arapahoe County Medical Society by P. D. Rothwell, M. D., Denver, Colorado. Price 50 cents. W. W. Rea, publisher, Denver, Col.

THE NEW YORK MEDICAL JOURNAL VISITING LIST AND COMPLETE POCKET ACCOUNT-BOOK. Prepared by Charles H. Shears, A. M., M. D. Price \$1.25. D. Appleton & Co., publishers, 1, 3 and 5 Bond Street, New York.

This list is based upon an entirely new plan, each page being arranged for the accounts of three patients, to the number of thirty-one visits for each for each month. The necessity for writing a patient's name at each visit, and for searching through several closely written pages to ascertain how many visits have been made, is obviated. The practitioner can, at a glance, ascertain the condition of the account of any patient. It is provided with an Index, and is a most perfect Visiting List, being compact and convenient. It can be commenced at any time.

THE SOUTHERN CALIFORNIA MONTHLY. Published at Riverside, California Editors, J. F. T. Jenkins, C. M., M. D., and W. B. Sawyer, A. M., M. D. Terms, \$1 per annum.

This is a new venture in the field of medical journalism, which receives the following endorsement from the *Southern California Practitioner* :

"Being edited by two scholarly, versatile physicians, it has naturally a climatic flavor, and contains much that is of value to the student of climatology. Its purpose is to present the literature pertaining to all matters of interest in Southern California in a form both instructive and entertaining."

NERVOUS AND MENTAL DISEASES AS INFLUENCED BY THE CLIMATE OF COLORADO, is an interesting and practically instructive paper, read by Dr. J. T. Eskridge, before the Philadelphia Neurological Society. The doctor gives the results of three years' residence, observation and inquiry in that State.

The conclusions of the paper sustain the view that the climate of Colorado exerts a salutary influence on insomnia, nervous exhaustion and functional nervous diseases due to malnutrition, especially in localities of medium altitude, chorea being an exception, while organic cerebral diseases derive no benefit there.

Anæmic nervous states are decidedly benefited there, while active hyperæmic conditions are harmed, especially in the mountains.

Dr. Eskridge has our thanks for a reprint of his observations and inquiries, and deserves the thanks of the profession for this much-needed contribution to the literature.

The author concludes that whilst the majority of persons who go to Colorado get refreshing sleep for a number of months, and in some instances for years, yet there are a few nervous, hysterical individuals, who find great difficulty in getting refreshing sleep there. Cases of insomnia

in the East, due to active hyperæmia of the brain that is not relieved by rest, sleep poorly, he thinks, in Colorado. This has been his experience with some cases of this kind.

Insomnia seems to be less frequent and a far less trouble here than in the East. The early effect of this climate upon one coming to it is decidedly soporific. Sleep is notably profound and prolonged.

In most cases of insomnia this climate has exerted a salutary influence. The few exceptional cases not deriving benefit from the climate have been due to organic lesions which subsequently terminated in grave brain affections. In all cases dependent upon overwork, hyperæmia, or reflex troubles, the climate has proved to be of the utmost benefit.

THE MEDICAL WAIF, a new monthly medical journal, devoted to Diseases of Women, Children, Rectum and Anus, is wafted to us from Lafayette, Indiana. The navel, thorax, abdomen and cerebro-spinal axis will not be considered in this new journalistic venture; only *Women, Children, Rectum and Anus*. Following is a specimen wafer from the Review department, and the only review the *Waif* contains. We draw a line under its strongest points:

"We are in receipt of the *Independent Practitioner*, a microscopic fly speck on the horizon of dental journalism, edited by a fellow named Barrett, with D. D. S. after his name. Judging from the contents of the journal, we would infer that D. D. S. means Decidedly Darned Slim. And also, judging from his long, senseless sentences (seventy-two words in one sentence), we would infer that the contents of this fellow's thick skull only consist of white matter and *offal*."

The *Waif* is not waiting on the door-step of the Æsculapian temple to be taken in. It received, its managers inform us, nine hundred and seventeen physicians' names as subscribers the first month.

We have a physician in St. Louis who tries to make both ends meet by practicing dentistry and treating piles and fistula at the same time. We can understand the *rationale* of this blending of the extremes in practice, but just why all the diseases of women and children should be singled out for association with those of the latter end of all mankind is not plain, nor could we see it more plainly through "Yonut's improved double slide, wedge and rectal speculum," devised by the editor.

THE CENTURY IN RUSSIA. Mr. Kennan's Russian article in the January number of *The Century* is entitled "Russian Provincial Prisons," and it includes several chapters on various methods of communication among prisoners, one of the most interesting of which is the "knock alphabet," by which the prisoners converse from cell to cell by a system of raps. The first of Mr. Kennan's papers was printed in the November *Century*, and the publishers announce that they will send the November and December numbers free to all new subscribers who begin with January, 1888.

Mr. Kennan brought back more than 50 pounds of notes, papers, and original documents, many of the latter from secret Government archives, besides 500 or 600 foolscap pages of manuscript prepared for him by political exiles in all parts of Siberia, and covering the most noteworthy episodes in their lives. He visited every convict mine in Siberia, and every convict prison except one, and became acquainted with the exile system

better than most officers of the exile administration, and far better than any outsider. For this he has been blacklisted. But the stable door is locked after the horse is gone, and its rider cannot enter Russia again, nor will Russia allow Mr. Kennan to send back the stolen goods which he brought away, as he tried to do with "*Count Tolstoi*," in the *Century*. They were not sent back in the right shape, and were therefore intercepted on the border. Travelers into Siberia should be careful how they trifle with Russian hospitality, and gather up material that may be dangerous to the integrity of the Russian Empire if they wish to revisit Russia and omit a sojourn in Siberia.

THE SWISS CROSS.—An interesting number of this monthly magazine, published by and in the interest of the Agassiz Association is before us, full of short and entertaining articles of scientific and general interest. Its editor is Harland H. Ballard. The following is the attractive table of contents of the *Swiss Cross* for January, 1887: Frontispiece (portrait of Louis Agassiz); "A Scientific Expedition;" "History of the Agassiz Association," Harland H. Ballard; "Early Man in America," Hilborne T. Cresson; "A Trip to the Source of the Mississippi," Hopewell Clarke; "Is Botany a Suitable Study for Young Men?," J. F. A. Adams, M. D.; "Mind Reading;" "Water Crystals,—I.," Harlan H. Ballard; "Merciful Scientists," George T. Angell; "Standard Time and Measures;" "The Aboriginal Miller," O. T. Mason;" "The Prisoners of the Soudan;" "Professor Newberry on Earthquakes," Everett Hayden; "Natural Gas;" "Children's Hour (Ray Jessup's Minnows);" "Notes and Clippings;" "Reports from Chapters;" "Courses of Study (The Course in Mineralogy.—The Course in Zoology);" "Exchange."

THE LAWYERS' CODE OF ETHICS; A SATIRE.—If you want a full, round dollar's worth of solid fun at the expense of your mortal enemy, the lawyer, get this book, brother medical expert, from F. H. Thomas & Co., St. Louis, take the time to read it, and join us in a few smiles. It will lighten the burden of many a weary ride, and give you an exalted feeling of pride in the comparative unselfishness of your own profession, brother doctor, greater than you may have ever felt before. The author is one of an eminent trio, the brightest of whom went to the penitentiary. The next in brilliancy was sent to the Legislature, and the other, who has probably been practicing before the wrong bar, writes the book. The book has an ethereal and spiritual flavor. The writer is not known to us. We hope both book and author may be able to stand uprightly at the bar of public opinion.

THE ANNALS OF THE VERMONT ASYLUM FOR THE INSANE. A neat and well written book of three hundred pages, in good type, on good paper, handsomely bound in cloth and appropriately illustrated, is on our table. This is a creditable and most worthy memorial work on the part of the superintendent and management of this old and well-known institution. The annals are largely made up of the records which have from time to time during the past half century been made public in the annual reports and show how well all connected in official capacity with the Vermont Asylum for the Insane have crowded "the narrow space of life with wise designs and virtuous deeds."

AMERICAN PUBLIC HEALTH ASSOCIATION. We have received a set of the "Lomb Prize Essays," published under the auspices of the above association, for the purpose of diffusing of sanitary knowledge. The essay of Dr. Sternberg is of special interest to physicians. We take pleasure in calling the attention of physicians, teachers, manufacturers, and the public generally to the value of the essays. We have read, and as requested, have placed the set sent us where it will do the most good.

HEALTH LESSONS. By Jerome Walker, M. D., is a valuable primary book for little learners in physiology. The simplicity and planning of the text and the abundant and apt illustrations commend it. It would be a useful book in hospitals for the insane for entertaining such patients uneducated in physiology who might be induced to read.

Gowers' Diseases of the Brain, Second Edition, price \$2.00, is a book of value to every practicing physician. Gowers writes nothing amiss, and the good opinion expressed by this JOURNAL of the first edition is only enhanced by the contents of the book before us. Published by P. Blakiston, Son & Co. (Successors to Lindsay & Blakiston), 1012 Walnut Street, Philadelphia.

The Present State of Our Knowledge Regarding Localization in the Cortex Cerebri. By Landon Carter Gray, M. D., Professor of Nervous and Mental Disease in the N. Y. Polyclinic. Will be noticed in next issue.

The Radical Treatment of Trachoma. Paper read before the Central Illinois District Medical Society, at its semi-annual meeting in Springfield, Ills., October 19, 1886, by A. E. Prince, M. D.

The Galvano-Cautery Sound and its Application, Especially in Hypertrophy of the Prostate, with Reports of Cases. By Robert Newman, M. D., of New York.

To What Extent Can We Classify Vesical Calculi for Operation? With a Report of Cases and Remarks on the Different Methods Employed. By A. Vanderveer, M. D., of Albany, New York.

Conservative Gynecology.—Is Divulsion of the Cervix Uteri Correct and Rational in the Principle, Justifiable in Application? By George F. Hulbert, M. D., Late Superintendent St. Louis Female Hospital, St. Louis.

Delirium Grave. By E. C. Spitzka, M. D., of New York City. Read in the Section on Practice of Medicine, Materia Medica and Therapeutics, at the Thirty-Eighth Annual Meeting of the American Medical Association.

The Buffalo Lithia Waters in the Treatment of the Nervous System. By G. Halsted Boyland, M. D., M. A., late Surgeon French Army (Decorated); late Professor of Surgery in the Baltimore Medical College, etc.

Progressive Muscular Atrophy, Beginning in the Legs, by J. B. Marvin, M. D.

Wounds, their Aseptic and Antiseptic Management, by David Prince M. D., Jacksonville, Ills.

Criminality, by Willam G. Stevenson, M. D., of Poughkeepsie, N. Y.

Should Physicians be Pharmacists? By Charles L. Mitchell, M. D.

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ORIGINAL CONTRIBUTIONS.

L'Allucinata di Castelnuovo Monti.*

By PROFESSOR A. TAMBURINI, Italy.

IN the last of May and in the month of June, 1886, there was spread a rumor in the district of the Reggian mountain, of a wonderful apparition of the Madonna, to a girl of thirteen years, named Bagnoli Adele, of Castelnuovo Monti. The Madonna always appeared to her in the same place, at a juniper bush, in a locality called the Pianello, and she replied to the girl's questions. The report of this miracle, after having excited the wonder and enthusiasm of the people of the neighborhood, was spread into distant parts, so that in a short time it became the cause of numerous pilgrimages. Not only the rustics of the country, but even the educated and cultivated participated in the enthusiasm. The girl was forcibly detained in the place by the fanatics, who came to her, to obtain responses from the Madonna. In a very short time, by being diffused from mouth to mouth, the reality of the miracle was increasingly accepted, and constantly augmented in marvelous characters. The bark of the juniper, at which the apparition took place, on being cut gave out drops of blood; blind persons who

* Translated from the *Revista Sperimentale*, Vol. XIII, Fasc. 2, October, 1887, by JOSEPH WORKMAN, M. D., Toronto, Canada.

came to see the juniper were instantly restored to sight; cripples stood up erect and walked. A picture of the apparition, in the form of a Madonna, dressed in white, with blonde hair, flowing down, was published and sold. Pilgrims flocked from distant parts, and surrounded the marvelous juniper, which was very soon covered over with medals, sacred images, and votive wreaths, whilst at its root an excavation made in the ground became the depository of offerings in money.

When things reached this point, the matter demanded the attention of the authorities, and these adopted proper measures in the end of June.

The Prefect had the juniper cut down and carried away, and all the objects around it taken away, including the money; but the juniper was speedily substituted by another, which was said to have sprung up by miracle; this one also was taken away, and then a cross appeared in its stead; the place was then put under guard of the Royal carbineers, who were commanded to prevent the people from approaching it.

The girl was brought to the Pyschiatric Institute of Reggio, on the 2d of July, for the purpose of being carefully observed. The miracle thus came to an end, the pilgrimages ceased, and all the fanatical enthusiasm awakened by it, passed off. B. Adele remained under observance in the asylum until the 1st of September, when she returned to her family, and at this time I presented to the R. Prefecture my report on the case, from which I now abstract the most important part, which I here present:

"B. Adele is thirteen years old (born in October, 1873); she comes of a family not wholly exempt from mental affections; an uncle of her father, totally uneducated, attired himself as a priest, and went about celebrating mass in the woods, and chanting everywhere prayers and psalms. Religious tendencies appear rather conspicuously in her family, some of whom belong to the clergy, and several of her brothers have been educated in the Seminary. Her

sisters have evident signs of anemia: one of them was five years ill from a white tumor at the elbow, and this joint is now anchylosed.

"But little has been learned of her past life; it would seem that she never had suffered under any disease excepting diphtheria. Her intelligence is but limited, she was irritable, morose and changeable, taciturn and unconfiding; she was very assiduous in religious acts, but, as it would appear, more from the pressure of the family than from spontaneous fervor; in truth, the mother sent her to mass every morning, and her teacher took her to confession and the communion every week.

"Nothing extraordinary was observed in her before the day of the first apparition; she was in her wonted humor; she ate with appetite and slept quietly. The apparition took place on the 14th of May, 1886. I here present the results embodied in the documents furnished to me, as derived from the statements made by the family, and from the investigations made on the spot by the talented Dr. Guicciardi, who went there for the inquiry.

"The place where the apparition occurred is a little hill, called Pianello, on the slope of which the village of Borano is situated, about two hundred yards from the house of B——, which is surrounded by a grove of chesnut trees; above this there are a few ferns and some scattered dwarf junipers.

"On the afternoon of 14th May, Adele had been, for some hours, along with a friend, Emma G——, of the same age, on the little hill, herding sheep and playing. They went down to seek for a bird's nest in a chesnut tree, in a meadow belonging to the father of Emma; he took them by surprise and shouted roughly at them, for tramping down the grass and not attending to the sheep. They were frightened that he would beat them, and they fled back to their post; he shouted at them not to go back over the grass; but they, in order to escape faster, went forward at full speed, and out of breath leaped over the fence of the meadow. The place at which they leaped

was about twenty yards from the spot where there was a juniper tree on the little hill. In leaping the fence Adele fell; she rose quickly, she stopped and stared ecstatically towards the juniper, and called to her companion to 'look at that *pina*,' (*pina* in that local dialect signifies *bambina*, (that is, little girl or baby). Emma saw nothing, and she told Adele to come on to the top of the hill and gather in the sheep; but Adele repeated that she 'saw a *bambina* clothed in white,' and that 'it turned round towards her and called to her with signs.' Emma then became frightened and cried to her 'to take care lest it might be the devil.' Adele became terrified at these words,' and they both fled to the top of the hill. On reaching this, Adele had lost all power, she was pale and about to faint. At this moment, her sister Henrietta, who was not far off, came, and holding up Adele, took her with great effort to her house, trembling all over and almost senseless. She refused to eat or to say anything about what she had seen, and in the night she could not sleep. The next day she was melancholy, silent and very irritable.

"The report of this apparition soon spread all around, and was variously interpreted by the neighbors, the majority of whom regarded it as an apparition of the Madonna.

"It appears that the girl, being forbidden by the family, did not go back to the place until the 23d of May; and during this time she continued listless, thoughtful and fearful. On this day she went with her elder sister to the hill, and the moment she reached the place of the vision, she cried out that she saw the same sight, in the form of a *bambina* clothed in white. Both the sisters now ran off as fast as possible, but being met by some peasants, they were forced to return to the place, and were accompanied by a great crowd who had come to visit the scene of the miracle. On reaching the spot, Adele again saw the *bambina*, and those present made her put some questions to it. The girl, though in terror, called out, 'Who are you?' and she instantly said she heard the thing reply that she

was '*Maria Concetta*.' Then wonder, enthusiasm and fanaticism seized the crowd; and from that moment there was a continuous stream of eager pilgrims to the Pianello, with Adele at the head, who always saw the apparition, and spoke to it, putting to it all the questions suggested to her. This went on, in the midst of popular excitement, until the end of June, when proper measures were adopted by the authorities.

"As to the character of the apparition and the colloquies of Adele with it, the following are the most important results obtained by us. The image appeared to Adele to be about her own stature, and to have the aspect of a *bambina*, with rosy cheeks, dark eyes, blonde flowing hair, and a smiling physiognomy; the hands were joined over the breast, an azure blue wreath was on the neck, and a silver cross on the breast. It turned the eyes around and moved the lips in speaking; the voice was that of a child. She saw the image only when she looked at the juniper, and never otherwise; she also perceived it, though not distinctly, when she was at a good distance, but always when she was in sight of the juniper; it appeared to her with greatest nicety when she was about three yards from the juniper; if she approached much nearer it always disappeared, but it re-appeared when she drew back: When she walked round the juniper, the image also appeared to turn, always presenting to her its face. If anyone placed his hand before the juniper, at different heights, she always saw the hand covering that part of the image. Sometimes she said she saw, among the branches, beside the image, a brilliant point like a taper. In the night the image had the same appearance and the same nicety. In her depiction of these particulars, to the family, a perfect accordance was always observed in all the descriptions given by the girl to them, to the neighbors and to us.

"As regards the words which she said she heard pronounced by the image, they were always replies to the questions which she put to it, and were never spontaneous.

The questions suggested to her by persons around her, related to the future life, salvation, etc. The answers were very simple, in form of monosyllables, and were often absolutely childish; sometimes no answer was given. On one occasion they made her ask how many churches there were in Rome; the answer was 'ninety-five parochical;' some of those present said this was correct, and wondered. They also tried by writing certain words on paper which they folded and placed in her hand, in order that she might ask the apparition what was written on it; the replies always related to the number of the words, and not to the substance of them, and sometimes the guess was right, but at other times not so. It is to be noted that when she put questions to the apparition, there was no delay in the replies; she instantly, and with great rapidity of utterance, pronounced what she said she had heard from the image.

"In the meantime all these facts, the constancy and the characteristics of the apparition, the answers given, whether correct or not, stupefied the crowd who had come from all parts, to witness the marvelous and fortunate miracles. This state of general mental exaltation necessarily reverberated in the girl herself, and augmented her excitement. She, who before had unwillingly gone to the place of the apparition, now craved continually to go to it, and in the night, whilst unable to sleep, she would steal out and run to the Pianello, to contemplate the image, which never failed to appear to her. In these days she was always pensive, melancholy, she ate little, and often wept bitterly; she continued always utterly abstracted, and in order to get any reply from her it was necessary to drag the words from her mouth.

"Finally, in the last days of June, after proper arrangements had been made, the girl was kept shut up at home, and was brought under asylum observance on the 2d of July.

"When she came here every symptom of exaltation had disappeared; she was calm, tranquil, a little confused and

somewhat frightened at the strangeness of the place to which she had been brought, and rather sad because of her separation from the family. She gave a very clear account of her apparitions, with an expression of childish simplicity, but at the same time of seriousness, almost indeed of timidity and reserve; but this condition of mind constantly decreased, and she gradually acquired confidence in us.

"The following is the result of our observance during the time of her asylum residence:

"She is a well-formed girl both in head and person; but the cranium is rather too large ($23\frac{1}{2}$ inches in circumference), [surely very large for an Italian girl of thirteen]; her stature is very small (four feet, six inches); her occiput is flat. The type of the skull is brachycephalic.

"Her physiognomy, though not coarse (*brutta*), presents something strange; in structure (prominence of the zygomas, flat nose, thick lips, staring eyes), also in the expression which she assumes when she fixes her gaze, or looks about furtively with her large dark eyes.

"Her character seems to be very lively and rather extravagant; she is capricious, vain, indocile and mischievous; but her mischief is childish,—it shows itself in little spites, little fibs and prying into everything. Sometimes she comes out with very strange expressions and proposals, such as, '*wishing to be inflated with a pair of bellows that she may appear fat.*' She is very excitable, very ready to cry or laugh, for very slight causes.

"Her intelligence is moderately developed, but it does not exceed that of a child who has been sedulously instructed; she can read and write tolerably well. Her perception is prompt and exact. Her ideas are sometimes strange; in her first days of residence here, her ideation seemed to be as yet rather confused; in fact she has told us that wherever she went, and even in the asylum, 'she believed that everything she saw was her own property.' Association of ideas was rather feeble and saltatory in her; she readily passed from one thought to another, without any connection, and more usually than in persons

of her age. Her memory is sufficiently prompt and exact. She always relates, with great exactitude and coherence, the particulars of her apparitions; but after a few days of her residence, it was observed that she did not attach much importance to them, thus gradually showing, as time passed on, that, just in proportion as the lapse of time decreased the vividness of the occurrences, so did her memory of them become more faint, and the corresponding emotional disturbance subsided in like manner.

"The affective sentiments seem to be moderately developed, but they are not strong; those of the egotistic order are, however, pretty fully developed. Her religious sentiments do not seem to rise above the level of outward forms; in profound inward feeling they are wanting; she attends church without any mental improvement, and her attention is very erratic; she recites the prayers in a perfectly automatic fashion, exactly as children do. She manifests no really abnormal instincts or tendencies; but both are of an absolutely childish character. Her sleep is sound and long; but she frequently sits up in the night in her bed, gesticulating and talking loudly and long, using words very incomprehensible, and never remembered by her after waking.

"In the asylum she never had the least sign of the apparition, nor any sort of illusion or hallucination, either spontaneous or provoked; and many times we requested her to concentrate her thoughts, in order that she might see the image reappear, but all in vain. She always asserted that the Madonna was never seen by her unless when she was before the juniper on the Pianello; we also tried, by conducting her among trees resembling that juniper, but without any effect.

"The physical examination, many times made, gave the following results:

"Tactile sensibility was normal on the right side, but rather obtuse on the left. Acoustic sensibility rather diminished in the left ear, in which she often has pains, and these are associated with almost total temporary deafness.

"The visual function appeared to be normal on both sides, both in strength and acuteness, and likewise in the power of accommodation and the perception of colors; the reaction of the pupils to light and to distances was prompt. The perimetric examination, however, showed that the field of vision was more limited on the left. Ophthalmoscopic examination showed a marked hyperæmia of the fundus of the eye, especially of the right one, with great turgescence of the retinal and papillary vessels. The other senses are exquisite.

"Electric motility and contractility normal; muscular force defective (on the right twenty-four, on the left twenty-one, both hands twenty-nine), the reflexes normal. Examination of the heart gave a prolongation of the first aortic sound, and a slight anemic venous souffle in the neck; the sphygmographic tracing presents the first type of pulse (84); breathing normal. The weight of the body progressively augmented during her stay with us, from 30.5 kilogr. on entrance to 36 on her leaving, (or 67 to 79 lbs. English weight). Her organic functions are normal; at first she was obstinate, and refused to eat; she afterwards explained that she was afraid of bad medicines being put into her food; after acquiring more confidence, she ate regularly. She has not yet menstruated.

"On admission, she was kept under observance in a room with a nurse; afterwards she was placed in the clothes room of the establishment, where she had no contact with the insane, and she worked almost constantly. When she went away (1st Sept.) to return to her family, she had become so reconciled to the place, and attached to all, that she appeared sorry to leave; in other respects she presented the same objective and functional conditions, both psychical and physical, as above stated.

"Throughout this period of observance, we were however enabled to see that though we might exclude any signs whatever of true and proper mental alteration, yet she presented in her character and the state of her nervous system, some facts which indicated an abnormal condition.

The strangeness, capriciousness and excitability of her character, the mobility in association of her ideas, and the extravagance of some of her proposals, the excessive childishness of her tendencies, her defective affectivity and her extreme egoism, show in her psychical constitution a congenital anomaly. The confusion of mind under which she labored on her admission into the Institute, the somnambulistic phenomena presented in the night, the facts observed in her tactile and auditive senses (left hemianæsthesia), and those revealed by the ophthalmoscope, show a pathological condition of the nervous system.

"The conception which we have formed from accurate observance of this girl, is that she presents, in a general state, more or less latent, all the characters of an hysterical condition, which does not now affect the motor functions, but only the psychical and sensory. This conception is strengthened by the fact of hereditary tendency, which was observed in the religious insanity of her father's uncle."

From the preceding data how are the facts of the apparition to be explained?

It is useless now to demonstrate what is no longer doubted, that is, apparitions are no other than *hallucinations*; hallucinations of sight only, when they consist in simple visions; hallucinations of both sight and hearing, when voices are heard in association.

Now, in order to assure ourselves that in this girl the apparition was nothing but a hallucination, we must inquire:—

1st. Whether there existed in her a propitious soil for the development of hallucinations.

2nd. Whether the characters presented by the apparitions, as well as in their mode of presentation, as in all their particulars, were really those of hallucinations.

3rd. Whether in the period of these apparitions she presented other characters, which would prove her to be affected by an abnormal state of the nervous system.

1st. That the physico-psychic state of B. Adele presented a propitious soil for the production of hallucinations, is clearly shown by what we have before detailed. There were in her all the characters of a neuropathic foundation, more or less latent, a state which we would call *hysteroid*, in which the origination of abnormal sensory phenomena is very easy, phenomena exactly such as those of hallucinations; it is sufficient that the augmented excitability of the nervous centres shall be somewhat accentuated.

If we next add what was shown of an abnormal nature in the organs of sight and hearing, we more readily understand that she might present particular predispositions to development of hallucinations, on the part of these organs.

In determining the special nature of the hallucination in the form of an apparition of the Madonna, there must, in this case, have been a large contribution from the frequency of religious practices, the ultra-religious surroundings in the family, and probably in the school, the frequent sights of images of the Madonna in the churches and the processions. In fact, one such image is placed at a short distance from the girl's house, in the sanctuary of the *Madonna dell' Aiuto* (this Madonna is dressed in red, and she holds the babe in her arms): and a statue of the Madonna, clothed in blue, was often seen carried in procession through the streets of Castelnuovo. Besides it is not to be forgotten that the interpretation "*divine*," given to the figure of the bambina seen by her, appears not to have arisen in the mind of the girl herself, but had been suggested by the persons surrounding her, who participated in her exaltation, and certainly increased it.

2nd. The mode in which the apparition was at first manifested, evidently has all the characters of a true hallucination. In fact this mental state usually arises unexpectedly, with all the signs of spontaneity, and with irresistible suddenness, independent of the will; and the object forming the hallucination appears instantly in all its nicety, with extraordinary force, so that it is very difficult

to the hallucinated subject to rid himself of an impression which has all the traits of reality; with such clear and independent characteristics do hallucinatory images present themselves. Sometimes these images appear at first rather confused, and then by little and little they are depicted more clearly; but this occurs more frequently in acoustic hallucinations; in visual hallucinations, the image appears, even at first, in full form and complete, very clear, conspicuous and luminous. This is what is wont to be verified in the hallucinations of the insane, the hysterical, etc., and in the visions handed down to us in history, and those which are so common in the lives of the saints.

Well, just so to Adele, unexpectedly, while she was thinking of something quite different, and along with her friend had leaped the fence, there appeared in the juniper bush a bambina, which she saw from the very first, with all the evidence of reality, and which she believed to be a reality; then she was terrified, and she fled, because her friend said she saw nothing. After some days she visited the place with her sister; again the apparition, again the fright, again the flight; but the enthusiastic crowd drag her back to the spot and from that time forward, whenever she went to the Pianello, the same image, in the same place, always appeared to her.

The nice and minutely described characters of this image, always the same, which she repeats constantly, with remarkable clearness and exactitude, fully prove that she had certainly seen, and very exactly too, the image.

The fact of the same image appearing when her sight was impressed with a definite real object, the juniper,—it appearing clearly to her only at the distance of three yards (the ordinary distance of exact vision of the minute details of objects in normal eyes), and the seeing of it always with the face turned to her, when she walked around it, are all facts which very clearly characterize a true and very intense hallucination of sight, which is wont to be often colligated with a real sensation, and to be associated with all the physiological characters of this sensation.

The fact, too, which we learned from the information given in the report of the case, that when anyone interposed his hand over the place of the apparition, at different heights, she always saw this hand in front of the image, is just such as characterizes the reality of the hallucination, for in hallucinations it is found, that by placing a body before the eyes of the subject, the interposed body impedes, in all its extent, the view of the hallucinatory image, which always appears behind, and never before bodies interposed. In a similar way we must explain the fact, that the image disappeared whenever she approached too close to the juniper, and that it re-appeared when she withdrew to the proper distance; in this instance the juniper acted as an opaque body between the eyes of Adele and the hallucinatory image, which, as happens in very neat visual hallucinations, always appears at a definite distance, which is exactly that of distinct sight.

It is also important to note that the occurrence of the apparition was preceded by an emotional state and also by unwonted physical facts,—as the fast running, the fall in crossing the fence and the quick rising again. The emotional state, caused by the shouts and threats of the father of G——, represents, as is known, a very favorable occasion for the development of hallucinations; so also the anxiety in the race, the effort to leap the fence, the fall, and the hurried rising from the ground represent just so many circumstances fitted to disturb the circulation and respiration, and above all the circulation of the brain, and hence to disturb the functions of the cerebral cortex in whose sensory centres it is now held that hallucinations have their origin.

But here some questions may be asked. How could a hallucination arise, and be so constantly maintained, and continuedly regarded as a reality, whilst in all other respects the mental functions remained unaffected? This fact is by no means unfrequent. It might suffice to instance the hallucinations of Goethe, Pascal, Rousseau, Newton and many others, in whom the hallucinal phenomenon

was produced, not only in the integrity, but also in the highest potency of the intellect, and with the full consciousness of the illusion; but it finds besides further easy explanation. As hallucinations consist mainly in a state of special excitement of the cortical nervous centres, which are the seat and depository of normal perceptions, we can understand, that in an easily excited brain, whether by means of spontaneous irritation, emotional disturbance, or some other cause, there may be improvisedly produced that particular modification of a limited zone of the sensory cortex, which causes the development of a morbid perception, that is, the creation of a single and distinct hallucinal image; and if this image presents characters so exact and conspicuous as to show a perfect resemblance to the real thing, and if, further, the intelligence of the affected individual is not sufficiently strong and solid, to enable him to develop and exert a valid control over the received sensation, and still more if his intelligence is but weak, childish, little cultivated, readily unbalanced, the hallucinal image will of necessity be regarded as a real sensation.

Again, if this false perception has been associated, from its first occurrence, with a real perception, with which it has been closely united, it is quite natural that every time the brain chances to be impressed by the sensation of the real object, there will necessarily, by the law of association, be resuscitated in it the morbid correlated sensation also, which was primarily connected with it; and or the reasons already stated, every time the morbid sensation may return it will be regarded as a reality.

It may further be asked, whether, in the case of B. Adele, the constant reproduction of the hallucination by the repetition of the real sensation of the juniper, was always a spontaneous primitive fact, or not rather one evoked by the desire and will of the girl? It is well known that in insane and neuropathic persons, and even in men of great genius, who have recorded in their memoirs the hallucinal phenomena with which they were affected, the

hallucinations might be sometimes spontaneous, and at other times voluntary. Goethe and Newton have stated that by an effort of the will, they were able, not only to call forth, in all the clearness of reality, the image of a flower or of the solar spectrum, but they could even minutely examine them in their several particulars, and at pleasure transform their characters. Thus also, in certain insane persons, it is only when they isolate themselves from others, when they concentrate their minds in the intention of burying themselves in the world of phantasms by which they are vanquished, and when finally they evoke a special accommodation of their peripheral organs of sense, by directing them to those parts from which their morbid sensations appear to proceed, it is then only that the hallucinations appear to them in their full clearness. The same fact is verified also, and in a very exact manner, in those hallucinations which are produced in hypnotized persons.

It might not then be out of place to suppose that a similar fact was produced in our hallucinated girl, that is, in the excitement caused by the marvelous details of which she was the prime subject, and influenced by a very strong desire, which must have then possessed her, that the miraculous fact should constantly be reproduced, when also the simple excitement produced on the nervous centres of the real impression of the juniper was not sufficient to call forth the apparition, or to produce it in all its exactitude and clearness, there may have been the concurrence of an effort, even automatic and quasi-unconscious, of the will, to bring it forth and to render it more clear and complete.

Again, that there came to B. Adele, every time she approached the juniper, a true repetition of an actual hallucinatory image, and not merely a *mnemonic reproduction* of the image before, perceived by her, is proved by the fact that when far away from the juniper, the image failed to appear, and though we urged her to concentrate her mind, in order to see the apparition reproduced, at least

in the form of a mnemonic image, yet, she never succeeded. It is well known that between a hallucinal image, and the mnemonic reproduction of an image, it is very difficult, if not impossible, to establish exact and precise limits.

Some doubts may arise with regard to the nature and characters of that acoustic hallucination which becomes speedily associated with a visive one, in the form of words spoken by the apparition. Did she really hear, in a clear and distinct voice, the words which she so instantly repeated, after putting the questions suggested to her, or were they but simple ideas which she formulated in her own mind, and attributed to the appearing image as if given forth by it? The girl informed us that when the image was speaking, it moved the lips, and its voice was sweet and clear, like that of a child; but would this sensation, which must have been very nice and clear, the first time it was produced, always have remained such, when the questions she was obliged to ask the image were so often reiterated, and she gave the responses so instantly? It is not improbable that in the latter case the replies were the product of her own mind, not always in the form of true and proper acoustic sensations, but in the form of simple intimately formulated thoughts which she held to have proceeded from the image; equivalent in this respect to what happens with some spiritual mediums, the so-called *intuitives*, who attribute to spirits present, certain conceptions, discourses, poetry, etc., which, arising in their own minds, they believe to come from without, although they are aware that they do not hear them in form of a voice, but perceive them as simple thoughts (*intuitives*).

We must absolutely conclude that the characters of the apparition, and of the words attributed to it, were invested in the mind of Adele with all the distinctive traits of a pathological phenomenon, which is not of unfrequent occurrence.

3rd. The phenomena presented by Adele on the days of the apparition have all the signs of a state of

over-excitement of the nervous system. She was crazed, unquiet, silent, pensive, she often wept, she craved continually to get back to the Pianello, she ate little, could not sleep, stole away in the night to the place of the apparition to contemplate it. Finally when she was brought to the asylum, although all her over-excitement had subsided, she acknowledged the fact that her mind was yet a little confused, as usually happens after any strong shock of the nervous system.

After all this it does not seem to me worth while to discuss the question, whether in the whole affair *simulation* may or may not, have played a part, for this conclusion is too evidently excluded, alike by the youth and inexperience of the girl, and by the absence of any motive whatever, and further and above all, by the improvised and unexpected manner in which it was manifested, and the presence of all the typical characters of true hallucinations.

Resting on these considerations, I feel warranted in concluding my Report, to say :

1st. That B. Adele is a neuropathic girl, because of an abnormal congenital constitution of the nervous centres, resulting from heredity, and hence she is predisposed to the development of pathological phenomena, such as hallucinations, illusions, etc.

2ndly. That the fact of the apparition of the Madonna, verified in her in the months of May and June, was the effect of visive and acoustic hallucinations, since in the case all the distinctive characters of true hallucinations were presented, and because at that time the girl showed all the signs of a state of over-excitement of the nervous system.

3rdly. That because of the strong predisposition of B. Adele to the development of such phenomena, and because of the hurtful consequences that may result to her health and to public order, it is necessary that she shall be well taken care of and assisted by her family, watching closely

her state of health, especially in the approaching period of puberty, and above all keeping her away from all those physical and moral influences (such as excessive religious practices, superstitious acts, long vigils, etc.), which might, in any way whatever, favor the inception and development of such morbid phenomena.

I have thought that the publication of this case was of some interest, especially as it does not very often happen that we are able to make a special study of such cases, and because this one appears to me to be of special importance: 1st. From the neatness of the hallucinal phenomena; 2nd. From the coincidence of these with a psychical state relatively, or perhaps rather apparently, quite sound; 3rd. From the effect on social order, which the fact began to exhibit, by exalting the minds of the rural population, among whom it happened, and from the fact that it serves to explain to us, with much clearness, the mode of origin of certain events belonging to the domain of history, the point of departure of which was represented by some miraculous apparition.

Occupation in Treatment of Insanity.*

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A LIFE spent in aimless idleness is a life of morbid discontent, even in the midst of luxurious surroundings. This is true, as we all know, of people in the sane world, and it is likewise true concerning the insane.

It is a well-recognized physiological fact that the systematic exercise of the muscles is essential to a proper growth and development of the physical powers; and the same is true in regard to the development and strength of the mental faculties. The best results are obtainable only when both the physical powers and the mental faculties are properly and systematically exercised within the limits of the powers of endurance, but without excessive fatigue or exhaustion. All will agree that this is true of persons who are in their normal state of health.

It is also a well-known fact that the proper exercise of a part that is recovering from an injury, caused by violence or disease, is an essential element of the treatment, after a suitable period of quiescence, during which there is a readjustment of tissues.

The individual parts under the readjustment may not bear the same relation to each other that they did before the injury or disease affected them. The movements of such injured part may not be the same as they were before. It may be crippled in the performance of its functions, and its usefulness may be greatly impaired. Judicious exercise of such an affected part is, however, essential to the restoration of its functions. Without such exercise, a limb, for example, that has been fractured would, in time suffer atrophy, and its usefulness would be entirely destroyed.

* Read in the Psychological Section of the Ninth International Medical Congress.

In recovering the functions there will, in a large proportion of cases, be a deviation from the normal action, depending upon the alteration of the tissues from loss of substance, the presence of adventitious matter or change of relation and adjustment.

These facts are as true concerning the brain and nervous system as of any other part of the body.

Insanity is the result of injury from violence or from disease, either functional or structural, by which the operations of the mental faculties are disarranged, perverted or paralyzed.

The treatment of acute mania is analogous to that of an injured limb, both requiring restraint, rest, and suitable medication during the period of exaltation as indicated by the inflammatory action in one case, and by the abnormal and excited mental action in the other.

The analogy may be traced through subsequent stages; but it is the stage of convalescence with which we are at present most concerned. It is during this period that we attach the greatest importance to such occupation as will interest the patient and divert his thoughts from himself and his imaginary troubles.

With the commencement of the stage of convalescence, when the patient begins to recognize his surroundings and realizes the fact that he is under the care of other persons, and is deprived of his liberty, he becomes discontented, and grows weary of the restraint of hospital life and longs for his freedom and his home. He cannot understand why he is kept under surveillance, and is likely to attribute sinister motives to his friends and the attendants. Somebody is doing him injustice for selfish ends.

Being relieved of all personal responsibility, and his life being regulated for him, he is left to the contemplation of himself and his imaginary troubles. If left in idleness he dwells upon the wrongs that he thinks have been inflicted upon him, and continues a prey to his delusions until they may become fixed; or he may dwell upon the

subject of his home and his family, who are, as he believes, unjustly deprived of his society and help.

If his returning energies during convalescence are repressed, and not permitted to gain strength by proper exercise, the *ennui* becomes depressive, and he may sink into a condition of listless inactivity, or dementia.

It is at this stage of his case that diversion and occupation should be made available for his benefit. He should be encouraged in every way to think upon subjects outside of himself, and muscular exercise in the form of some light work, in which he can become interested, and to which his thoughts will be diverted, is the most suitable as a hygienic and therapeutic measure.

With no effort of this kind, at this stage of his disease, the patient will, in no great period of time, show the effects of such neglect. The scope of his mental life will shrink, and the brain and muscular system will become weaker until he reaches a condition of permanent debility from which he may not be reclaimed.

Here the analogy holds good as between the treatment of insanity and the treatment of other forms of somatic injury.

But all patients do not recover. In fact the majority become chronic and incurable.

With all the efforts that can be made in their behalf, some must pass into the state of dementia, in which they are incapable of any intelligent action, while others will retain a certain degree of mental capacity that suffices for some kind of useful occupation.

They will, however, be found to have suffered loss of certain faculties, and a weakening of others, and mental action will remain crippled during the rest of their lives. They undergo as it were, a reorganization upon a lower plane of mental life.

Occupation or labor, not of a severe character, is essential to the welfare and happiness of this class of patients.

I select a few cases from among the many to illustrate more fully this idea :

CASE I.—P., aged thirty-nine, was a man born with an insane temperament, who had received a fair degree of mental training. He was educated to a profession, and had been successful in its practice. Under the influence of a growing hallucination that it was his duty to preach, he saw the Holy Ghost one night, who commended him to give up his profession and assume the duties of an evangelist. He obeyed the mandate of the Spirit, and demanded ordination and consecration, which he obtained. But the devil laid snares for him, and his mental troubles increased. His eccentricities led him into various errors and excesses. He formed a strong and controlling delusion concerning his wife, against whom he manifested the bitterest of feelings.

He broke up his family, and after a short but checkered and stormy career, lost all self-control and was placed in a hospital for the insane, where he remained for many years, suffering under the weight and torture of his delusions, which assumed different forms and degrees.

However, after five or six years the mental excitement had sufficiently subsided so that he took kindly to the suggestion of light occupation in one of the departments of the hospital; an occupation with which he had had some familiarity in his boyhood.

He worked in this way more or less of the time for several years and became quite proficient and skillful, and was trusted with the management of the department.

Although his delusions had become fixed, they were gradually more or less buried and ceased to control his daily thought and action, and he began to think more of the world at large and his relations thereto. The idea of freedom and independence gradually grew upon him. He began to realize that his services were of value, and he became clamorous for compensation. This was an expression of natural feeling and was considered as indicative of returning reason.

He became confident that he was capable of taking care of himself, and without waiting for official sanction,

acted upon the idea that his time had come to leave the institution, and taking advantage of a favorable occasion, left the place and rested not until he had put himself outside of the jurisdiction of those who had power to arrest and detain him.

After various struggles for about one year to gain a livelihood, he finally settled down to the work he had followed at the hospital, opened a small shop, and eventually established himself in a fair business, which he has conducted regularly and with fair success for several years. He has lost all interest in his former profession, has sunk it in the ocean of forgetfulness, as he has also the idea that it is his duty to preach.

His life has, in fact, been rearranged on the plane and basis of his early experience, and he is as happy and contented as the average of humanity, except, perhaps, an occasional disturbance, when something occurs to bring to the surface a memory of his buried delusions and troubles.

I have no doubt that had this man been kept in idleness in the wards he would now be a hopeless dement, or have fallen a victim to fatal disease.

CASE II.—W., a school teacher, aged fifty-three, became insane through pressure of domestic afflictions, and was committed to an asylum. For more than three years he was in dense mental darkness, and governed entirely by his delusions. He was greatly excited and was considered a bad case.

In time the abnormal excitement gradually subsided, and he was capable of some small degree of self-control. There came sufficient rays of returning mental light to enable him to realize that something was wrong with himself, but everything appeared to him as dark and hopeless, and he constantly lamented the great misfortune that had overtaken him. At this point he was encouraged to think of other things and to do something that would be useful to himself and others. By a few hours' light work each

day, he became, in a few months' time, so much improved that it was deemed safe to trust him with the liberty of the grounds on parole. His inclinations taking a turn for thrift, he was encouraged, by the promise of a reward for his labors, to prosecute the destruction of rats and other pests of the institution. He became much interested in the pursuit of this work, and was a great benefit to the institution, and the diversion was a much greater benefit to himself. He gradually regained the control of his thoughts and emotions, and came finally to regard himself as having been insane. By his efforts he showed clearly that he had the ability to take care of himself. He reasoned well, and was correct and clear in his business transactions. About this time he was sent away from the hospital on furlough and placed upon his own responsibility. He continued to improve, overcame his delusions and prejudices, and was regarded as recovered, and was so discharged. Without the encouragement to the exercise of his mental faculties in connection with physical exercise there is no doubt in my mind that he would still be an inmate of the hospital, and still under the influence of his delusions and enveloped in mental darkness.

Differing in result from the foregoing, the following cases are typical of a class that may become useful under proper care and guidance:

CASE III.—K., aged thirty-seven, was a night watchman, who had become insane as was supposed from want of sleep and religious excitement. His insanity was of the maniacal form. He made several attempts at homicide before he was committed to the hospital. After some years, when the maniacal excitement had somewhat subsided, he was encouraged to assist about the farm, but it was a long time before there was sufficient self-control to enable him to do anything in a proper manner. As his homicidal impulses ceased, he was permitted to go about the premises, and was induced to help take care of the young stock. This proved to be the occupation that fitted his

case. He began to take an interest in it, and eventually became a very useful man. The young cattle are his daily companions, and no one could be more faithful in the care of them. He has forgotten wife and children, and apparently all of the past. Conjugal love, paternal affection, and all the ambitions of his former life are dead. He is only a remnant of his former self, but his remaining faculties have been readjusted to fit the environment of a new life. A life reorganized on a lower basis and very limited in its range of thought.

CASE IV.—Mary D., spinster, aged thirty-three. Prodromic symptoms were noticed for a period of three months before acute mania developed, which lasted more than three years. From the exhaustion resulting from long-continued excitement she was to all appearances passing into a stage of drooling dementia, when the attending physician made an effort to kindle into activity what little spark of intellect there might be left. He attempted to engage her in the common game of checkers. She had no conception of the game. It was necessary to take hold of her hand and aid her to move the pieces. Little by little she began to understand and eventually became a very fair player. She was also, as she improved, given some light, easy work to do, under the care and direction of an attendant. At the end of three years of this kind of care and exercise she was capable, under supervision, of doing ordinary work in a very fair manner; could talk with some degree of intelligence, regained her self-control to such an extent that she could act in harmony with the environment of hospital life; but on being taken to her home on a trial visit, it soon became evident that when this restraint was removed, the mental machinery had lost its governor, and that the *régime* of an asylum is necessary to keep her impulses and actions under proper control.

These cases represent classes of cases found in every asylum. The first presents an example of those cases in which the delusions are buried, at least for the time, but

may retain a slumbering vitality that may be awakened into activity by certain exciting causes. This man does not acknowledge that he has been insane. His delusions are fixed, and while he has learned to conceal them in deference to the opinion of others, his belief in them as realities is as firm as ever. They may be easily awakened by a well-directed question or by conversation directed to awaken his suspicions. The safety of this man's future will depend upon the absence of such exciting causes, and an environment calculated to keep the mind in channels of thought that will lead away from the contemplation of his delusions. Occupation in which the patient will be interested is the only resource in his case.

In the second case we observe a recovery after a long period of convalescence. This man recognizes the fact that he has been insane. He has corrected or conquered his delusions by rational processes. In his case employment was the best of therapeutic agents, and was the means of accomplishing what drugs could not do.

In case number three we observe the loss of mental powers that in many cases follows an attack of insanity. But this loss does not extend to the condition of dementia. It is to a great extent a loss of adjustment. The rearrangement of the mental forces on a lower plane, and with narrower scope, is such as to render him a very useful man under proper oversight.

The fourth case represents a large class of the chronic insane, who become amenable to the *régime* of hospital life under which they may render some useful service, but are without rational and self-guiding powers when removed from this controlling environment.

In all these cases employment is an important factor in effecting a cure or modifying the course of disease.

Comments on the subject of occupation for the insane have appeared of late in many of the reports of the superintendents of the American asylums.

The following extracts, taken from these reports, show the tendency of American thought at the present time.

Dr. C. W. King, of the Dayton Asylum, says (in 31st Report):

Insanity being largely a functional disturbance frequently independent of organic lesions, the rational remedy in such cases would be to furnish healthful exercise to the organ whose functions are disturbed, and to prescribe such employment as will best meet the requirements of each case and most thoroughly divert the patient's mind from thoughts of himself and his condition.

Functions of the brain, as well as those of the muscles, are impaired by inactivity, and no patient who has not degenerated into chronic dementia, should be permitted to remain in a ward from day to day and week to week unemployed. No doubt many cases have been lost, where if proper employment had been supplied in the beginning, they might have been saved.

Dr. C. M. Finch, of the Columbus Asylum, says (in the 47th Report):

The prime object should be to throw around the insane an environment of agencies which have for its objects the attainment of mind diversion, mental employment and bodily exercise of a proper kind and quality, sufficient to secure and maintain physical health.

Dr. W. W. Godding, of the Government Hospital for the Insane, says (in the 31st Report):

Whatever may be exceptionally true of the need of rest and the avoidance of all mental application in some acute, and rarely some recurrent, cases, the fact remains, that with our inmates the best road to quiet content, if not to cure, lies in the regular occupation of body and mind with some work not too hard of comprehension, nor too taxing to the strength in its performance.

Dr. W. T. O'Reilly, Inspector of Asylums and Public Charities, Province of Ontario, says:

When acute symptoms are succeeded by convalescence, and when the disease has passed into the chronic and incurable state, the foremost question is, what can be done to divert their attention from hallucinations, to stop them from nursing their delusions, and to aid them to retain at least a remnant of intelligent activity. Occupation here becomes an element of treatment which receives increased attention from year to year as the old shackles of mechanical restraint drop off.

Dr. A. H. Knapp, of the Osawatomie Asylum (5th Biennial Report), observes that:

The good effects of regular work are forcibly illustrated by the contrast presented, not only in the physical, but mental condition, when accustomed exercises are suspended during the winter months. When our outside working force go into winter quarters, and have nothing to do for three or four months, it becomes interesting, and in a few cases painfully so, to note the individual changes which take place. All grades of mental

worry and discontent, a gradual return of vicious propensities, depression and excitement, a capricious appetite, loss of sleep, loss of flesh and strength, are noticeable changes which occur in a greater or less degree with many of this class of patients. On the contrary, those who are furnished regular employment the year round are exempt from the reactionary mental and physical changes mentioned as affecting those who are by force of circumstances deprived of work for several months in the year. As a rule, those who go out to work regard it as a privilege which carries with it at least an implied obligation to place themselves upon their good behavior. This aids and strengthens their power of self-control, and helps to lift their deranged minds from the ruts and grooves into which real or imaginary troubles invite them, enlarges their sphere of thought and observation, and with all who are susceptible of recovery operates as a powerful factor in restoration.

Dr. G. B. Chapin, of the Pennsylvania Hospital, (Report 1886) says:

Even work of a continuous monotonous character leads to the formation anew of habits of industry which become fixed and re-established.

These utterances are all of recent date. They are taken, more or less, at random, from a number of reports in which the subject of occupation is discussed.

One or two experienced superintendents maintain conservative views on this subject, but the current of thought is against them. The conclusions to which we arrive are:

First, that occupation is one of the best of therapeutic agents in the treatment of insanity, especially during convalescence.

Second, that it is of the greatest value in diverting the chronic insane from their fixed delusions, and turning their thoughts into healthier channels.

Third, that it is the treatment most favorable to a re-adjustment and equilibrium of mental forces, from the wreck of acute mania, in which the mind is only partially destroyed.

Fourth, that it is applicable to the treatment of nearly all cases of insanity, but its use requires good judgment, more especially in the acute forms of mania.

Fifth, that it should be considered an essential element in the organization and administration of hospitals for the insane.

My First Case of Cocainophobia and Cocainomania.

WHAT WILL BECOME OF IT?

By C. H. HUGHES, M. D., St. Louis.

“**D**OCTOR, my case is so peculiar that you have never seen its like in all your experience or reading. I have been poisoned by cocaine. Two doses of a two per cent. solution taken two months ago have done the work, and I can now just manage to hold myself together by dint of constant gymnastic exercise and diet. I am ready to fall to pieces, and am done for,” said a young lawyer who came, accompanied by his mother, to consult me.

“My mother thinks my mind is not right, but she don’t know;—she don’t understand what is the matter,—you can’t understand it.”

On being questioned as to insomnia the young man complained that he “slept too much,” and said his “brain was dead.” No other evidence of excessive sleep was obtainable, and this statement may be regarded as a delusion.

The history of this young man is that of a young, honorably graduated and legally licensed attorney, unmarried, of limited means but of once boundless hopes, with father and mother in a measure dependent upon him for support, starting hopefully upon an uncertain professional career in a large city, seeing his meager means of sustenance disappear and no clients come, while debts and duns increase.

The disappointment and chagrin of failure have weakened his mental powers. The rugged realities of life, as

they came to him, watching and waiting and hoping, cover the rose-studded vista of his youthful imagination with thorns. Late hours and a little dissipation precipitates the impending instability for which an unstable neuropathic heritage has prepared the way. He reads at this most inopportune time the sensational details of the cocaine habit, and at a fatal moment for him, makes a trial of its exhilarating powers.

Two comparatively inert hypodermic injections are enough at this unpropitious hour to morbidly distort his enfeebled imagination, two endermics of pure water would have been equally potent had he supposed them to be cocaine, and this young man's mind is turned. A spurious poisoning affects him far more than, and differently from, the real cocaine toxhæmia. Painful visions of impending dissolution, mental and physical, the dire consequences of what he imagines to be the distinctive powers of this baneful drug now torment him.

A sadly resigned form of melancholia, with anxious, hopeless and settled sadness of expression, have supplanted the not long past vigorous, hopeful, confident look that characterized this young man's face before cocainophobia had passed into the insane conception of cocainomania—melancholia with cocaine dread—a melancholia which might as readily have had any other poison for its objective or any other fact or circumstance presenting to this morbid mind at the ill-opportuned epoch of its impending break-down.

The neurologist sees various other morbid phobias pass into the settled delusive convictions of insanity in the same way. Thus, syphilophobia, lyssophobia, without more than a suggestion of the virus of syphilis or rabies to excite them; and mysophobia or other toxiphobias without real toxic or contaminating influence.

This case has been precipitated by toxic suggestion upon a mind morbidly recipient. We will endeavor to cure the patient on the same principle, applied however, *contraria curantur*, and if the cerebral dissolution changes

are not too far advanced in this poor man's brain, we shall cure him through an invigorating neurotic course for his general nervous organism and a masterly psychiatry.

We tell him confidently that science has an antidote for such poisons.

Strychnia, codia, aloin, cannabis indica, arsenic, the hypophosphites and suitable nightly hypnotics, will enable us to manage the organic conditions, and through hypnotic and electric passes if he continues quiescent (as he is to-day), and a confident assurance that it is impossible for the effects he imagines have been inflicted upon him to continue, we hope to bring about in due time this unfortunate young man's restoration to sanity.

We speak thus confidently because the most careful scrutiny of the young man's physical symptoms reveal no evidence, as yet, of grave cerebral lesion. Thus far only cerebral neuratrophia and vasomotor disturbances are apparent, and he leaves our presence willing to return again to-morrow, confessing a sense of relief from the cerebral galvanic treatment, and this we confirm by a draught of malt extract, a little cannabis indica, codia, strychnia and the hypophosphites. We do not trust him with a prescription which he may read or renew.

He came confident of the hopelessness of his malady; he goes away believing there is a chance possibility of recovery. This, to us, is hopeful, and we shall endeavor, by a confident demeanor and suitable mental impression, to establish in him the reascendancy of his own psychical inhibitions which are now impaired; and we shall succeed, in accordance with the precedent of previous experience, if we are not mistaken in our diagnosis of the real cerebropathic condition. Hope and confidence, even faintly reawakened, are valuable therapeutic agencies in psychiatry. These, and suitable environment, are more valuable often than the grosser remedies of our *Materia Medica*. They are often as potent as the demonstrated hypnotic suggestions of Mons. Charcot which daily astonish us in the wards of Salpêtrière.

This man's chances of recovery are materially enhanced by:

1st. His change of environment from New York, where the malady had its inception and cause, to new surroundings entirely disconnected with its prodromal stage, or sequent causation.

2d. Because he has been induced to come voluntarily for treatment, even though only to please his mother.

3d. Because he receives treatment not in entire despair, but with even faint acquiescence in the possibility of its helping him.

4th. Because hope of the possibility of cure has been, even feebly, impressed by the treatment thus far employed.

5th. The organic buoyancy of youth, depressed but not destroyed, is in his favor.

6th. Because it is his first attack, and melancholia bravely fought in its early stage by the mature resources of experienced psychiatry need seldom become chronic.

7th. Because chiefly no evidences of organic damage to the brain are apparent, such as render recovery in cerebro-mental disease impossible.

This prognosis is, of course, only conjectural, for results in similar cases are not yet of record.

The cocainophobiatic, like the pyrophobiatic or the pyrophile, and the pyromaniac, may be monomorbid or polymorbid in cortex area; the morbid psychical perversion may be the incipient cerebral disorder that presages irreparable mental catastrophe, or it may prove, under judicious management, to be but a passing cloud of intellectual obscurity, for insanity has its degrees of intensity, severity and prognostic gravity, like dyspepsia or other diseases. Time only will complete the history of this case.

THE ALCOHOL HABIT.*

By L. W. BAKER, M. D., Baldwinville, Mass.,

Member American Association for the Cure of Inebriates; Corresponding Member
Medico-Legal Society, N. Y.; Superintendent Private Medical
Home for Nervous Invalids.

ONE prominent characteristic of nerve tissue is its capacity for retaining impressions made upon it by external influences. "All nervous tissue," says Dr. Wood, "have the faculty of being permanently impressed by temporarily acting stimuli, the thing remembered being in fact the functional excitement."

The same idea is expressed by Dr. Carpenter, that our nervous system grows to the modes in which it has been exercised; and he further remarks that it is "the universally-admitted fact that any sequence of mental action which has been frequently repeated tends to perpetuate itself, so that we are automatically prompted to think, feel or do what we have been accustomed to think, feel or do under like circumstances, without any consciously-formed purpose or anticipation of results. For there is no reason to regard the cerebrum as an exception to the general principle that while each part of the organism tends to form itself in accordance with the mode in which it is habitually exercised, this tendency will be especially strong in the nervous apparatus in virtue of that incessant regeneration which is the very condition of its functional activity. It scarcely indeed admits of doubt that every state of ideational consciousness, which is either very strong or is habitually repeated, leaves an organic impression on the cerebrum; in virtue of which the same state may be reproduced at any future time, in response to a suggestion fitted to excite it."

When alcohol is taken into the human body, certain

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characteristic impressions are made upon the nervous system, these are transient in duration, and unless the dose is repeated, the effects soon pass away. If, however, the use of the drug be continued for a considerable period of time, certain changes occur in the organism which become the organic basis of habit and of various mental and physical disorders.

Continued indulgence in alcohol, no matter under what circumstances its use is first commenced, causes physical changes in the circulation and nutrition of the brain, and establishes a morbid condition which is in itself a constantly recurring plea for a repetition of the stimulating effects of the drug.

The habitual use of intoxicants is very likely, sooner or later, to become a fixed and uncontrollable desire, as the natural result of frequently repeated impressions upon the central nervous system. That which was at first but a mere habit, may, in this way, pass beyond the control of the individual and become a confirmed neurosis. When this occurs, we have an entirely different condition of affairs from that present in the occasional drinker, who chooses to indulge now and then for social or sensual gratification only. A distinction must be made between the self-controlling vice of drunkenness, or acute alcoholism, and the irresistible impulse of disease. The danger of course is that the moderate drinker will occasionally indulge to excess, and later on, become the confirmed inebriate, but when the desire for alcohol has passed beyond the power of self-control, a positive condition of disease is present, perhaps not always characterized by changes discoverable at the autopsy, any more than in many cases of insanity, but an abnormal condition of the nervous centers exists, which demands alcoholic stimulation. In many of these cases, the habitual use of alcohol is the cause of the diseased condition, the deterioration of nerve element produced by the drug is the source of the continued desire for alcohol. The morbid circle is thus completed. "A vicious habit," says the *New York*

Medical Record, "by repetition establishes in time definite changes in nutrition, and perhaps structure. We may call this change, disease, or a vicious habit with an unknown somatic basis as we choose. It is a definite thing at all events, and one to be treated by other than mental therapeutics."

In the great majority of instances, an individual's first indulgence in alcohol is voluntary, under the control of the will, and is the result of his surroundings or associations. The custom of social drinking adds enormously to the liability of the establishment of the alcohol habit, while the lower classes of our larger cities and towns are, from the very nature of their education and surroundings, predisposed to the excessive use of alcohol. Ignorance, poverty and vice, unfortunate domestic relations, destitution and sorrow, have been for ages most important factors in the causation of chronic alcoholism, while the usages of social life are often convenient starting points for the accomplishment of the same result.

One of the effects of our present methods of living is an increased prevalence of the neurotic diathesis. "Our brains," says Sir Crichton Brown, "are finer in structure, more subtle in mechanism, and also more unstable than were those of our ancestors." With increased complexity of the nervous system there is augmented susceptibility to the action of stimulants and narcotics.

The fierce struggle for wealth, position, or the necessities of daily life, with their resultant tax upon a sensitive nervous system, not infrequently produces a condition of nerve exhaustion, in which there is great physical as well as mental weakness and inability to easily perform the ordinary duties of life. In this very common condition of neurasthenia, alcohol is often used for its stimulating effects in goading on the flagging powers of life, with the final result not only of increasing the sufferings of the individual, but of adding thereto by the formation of the alcohol habit.

There are many persons, and their number is on the

increase, who possess only sufficient nerve power to enable them to perform the most ordinary duties of life with safety. They live constantly on the border line of nervous and mental disaster. As long as they attempt only those labors of life which they are well able to perform, they are comparatively safe, but let them be subjected to severe mental strain or attempt, even temporarily, to carry a heavier burden by the aid of stimulants or narcotics, and the chances are very great that they will become the victims of insanity or inebriety.

The alcohol habit is not infrequently involuntary in character, and dependent upon the morbid craving of a defective nervous system. In this class may properly be placed those occasional outbursts of perverted nerve force which are characterized by periodical excessive indulgence in alcohol known as attacks of dipsomania.

The constitutional tendency to the excessive use of alcohol is usually transmitted from a previous generation. The children of intemperate, insane, or neurotic parents, inherit an impaired nervous system, which renders them peculiarly liable to mental and nervous diseases from the slightest exciting causes, while there is often present a strong tendency to the excessive use of stimulants and narcotics. That which was a mere habit in the parent, may in the child become an uncontrollable desire. "The nerve enfeeblement," says Anstie, "produced in an ancestor by great excess in drink, is reproduced in his various descendants, with the effect of producing insanity in the one, epilepsy in another, neuralgia in a third, alcoholic excess in a fourth, and so on."

Occasionally the excessive use of alcohol is the result of business or other reverses experienced by an individual possessing an unstable mental structure. The nerve strain of his misfortune may be too great for his powers of resistance, and the habitual use of intoxicants be developed, partly as a consequence of inherited mental weakness. The craving for alcohol often first manifests itself in a neurotic constitution, after some sudden misfortune

or mental strain; later on may occur an outbreak of actual insanity. In this event the successive links in the chain of causes are, an inherited unstable nervous system, inability to successfully cope with the reverses of life, development of a morbid craving for alcoholic stimulation, which leads to further deterioration of the nerve centers, and the occurrence of insanity. Alcohol, however, in these cases, is only a single factor in the production of the final result. It may possibly be only another symptom of slowly developing mental disease.

Alcohol is often prescribed by physicians in convalescence from acute disease and also in certain morbid conditions attended with suffering: its administration for this purpose, however, is not free from the danger of subsequent habitual use. As a medicine, this drug should be classed among the poisons, and should be prescribed by physicians with extreme care, and with due regard to the individual's hereditary tendencies and previous habits of life. The advice of Dr. B. W. Richardson regarding the use of alcohol in general medical practice is as sensible as it is scientific. "Prescribe it as a medicine, do not permit its use as a beverage. Prescribe it as alcohol from the dispensary; learn the exact quantity that is required to produce the desired effect, and then you will discover, and in no other way, whether the good effect attributed to the grog is due to the alcohol it contains or to some other agency." This method of using alcohol in medical practice, in lieu of brandy, wine, whiskey and other liquors containing alcohol, has received the endorsement of many prominent physicians, and possesses the advantage of an exact dosage while it lessens the liability of subsequent unauthorized use of the drug. I am quite confident that there would be fewer cases of alcoholism if physicians would adopt this method, and also exercise the same care in the use of alcohol that they do in the administration of other powerful remedies.

The influence which alcohol exerts upon the mental powers is usually quite marked, whether the drug be

taken continuously or in a single full dose. The brain requires the most healthful conditions for the proper performance of its functions. It cannot retain its normal activity, when frequently acted upon by a deleterious drug, consequently there is generally more or less mental disturbance in all cases of alcoholism as the result of impaired or perverted activity of one or more of the cerebral centers.

In the early stage of the disorder, the disturbance may be slight, and perhaps, transient in duration, but in the chronic alcoholic, when structural changes have occurred, the impairment of the mind is quite marked, and may include all degrees of mental derangement and degeneration. The tendency, however, is progressively downward in the scale of mental activity, with occasional outbursts of maniacal excitement or depression to complete dementia.

The question of responsibility for acts committed while the individual is under the influence of alcohol is an important one, and there are many legal, as well as moral difficulties in the way of its proper solution; still it is to be remembered that the excessive use of alcohol is often only a symptom of an inherited defective nervous system, the morbid actions of which are not always within the control of the individual. It is also true that acts committed while the brain is being acted upon by alcohol cannot be those of a normal mind.

Continued indulgence in alcohol lowers the vitality of the nerve centers by the degenerative changes which it produces. The individual is consequently less able to successfully endure those vicissitudes of life which, under ordinary circumstances, are not injurious to a well-balanced mind, while any unusual exposure, mental strain or shock is extremely liable in these cases of alcoholic predisposition to produce an outbreak of actual insanity. Anything which interferes with the healthy nutrition of the brain is a predisposing cause of insanity, and it is a fact beyond question, that alcohol in excess produces changes in the

brain circulation and nutrition, and that it is one of the most common causes of mental disease, producing its effects, not only by degradation of nerve element, which may be followed later by mental disturbance from a very slight exciting cause, but it is also the direct excitant of a toxic form of mental derangement known as alcoholic insanity.

Concerning the relation which alcohol bears to insanity, Dr. T. H. Kellogg remarks: "That it is active, first, in exciting attacks to which there is already an inherited or acquired tendency; secondly, in the development, *de novo*, of characteristic types of mental derangement, and directly in the transmission of weak and irritable nervous systems that predispose to mental disorder."

In considering the best methods of dealing with the victims of the alcohol habit a distinction must be made between those cases of alcoholism which are the direct result of voluntary indulgence for sensual or social gratification only, and those in whom the irresistible impulse of disease is present, as it often is, from the very beginning of their course. The first class often closely resembles the second, by reason of the morbid craving for alcohol which has been acquired by repeated indulgence, but its members are usually more amenable to treatment by moral means, at least in the early stage of the disorder, than are those in whom the excessive use of alcohol is more or less involuntary, the outcome of an impaired or defective nervous system.

The frequent result of the habitual use of intoxicants is a gradual loss of self-control and the establishment of that morbid condition of the higher nerve centers known as inebriety. When this occurs an entirely different method of treatment from that requisite to overcome a merely vicious habit will be necessary. We have now to deal with a disease needing the hearty co-operation and assistance of the patient as well as proper medical care for its relief.

The popular idea that the chronic inebriate is the

victim of a vice or crime which is within his unaided powers of control is as irrational as it is unscientific, for it is based upon a total misconception of the subject.

Inebriety, whether it be due to hereditary influences or induced by the habitual use of alcohol, is not a vice or crime to be punished with fines and imprisonment, but a disease requiring intelligent medical care and treatment. When this fact is fully recognized by the medical and legal professions, as well as by the public at large, a most important step in the rational treatment of the inebriate will have been taken. As soon as the doctrine of disease is accepted, inebriety passes from the domain of morality, which it has held so long, and becomes a proper subject for the consideration of the medical profession.

The inebriate will then be regarded as a sick man in need of special care. As a rule this can best be obtained in institutions properly equipped for this purpose, and in charge of physicians who have made special study of this subject. Such institutions, whether public or private, should be located as far as possible from every source of temptation, and should have all the legal powers of detention and control possessed by our best asylums for the insane; furthermore, our laws should be modified so as to compel the commitment of chronic inebriates to these special asylums rather than to the county jails or the institutions for the insane.

In this way the habitual, or periodic alcoholic, may, at the discretion of the court, be prevented from further injuring himself, his family, or society, while at the same time he will be placed under the best possible conditions for recovery, or if found to be incurable, will be provided with a permanent asylum home, which will, at least, prevent the transmission of the insane or inebriate diathesis to a succeeding generation.

When the inebriate has been properly treated in these special institutions the results have been more satisfactory than by any other method of treatment.

Of five hundred cases of inebriety discharged from the

Inebriates' Home, at Fort Hamilton, N. Y., Dr. Mason reports that two hundred and eighty-three had been heard from; of these:

148 were doing well.

10 were improved.

86 were unimproved.

29 had died.

8 had been transferred to Lunatic Asylum, Hospital or Alms-house.

2 were idiotic..

This plan has also received the endorsement of the medical profession. In 1876, the American Medical Association resolved "that special treatment in institutions adapted to that purpose is required for the cure of the inebriate, and it is the imperative duty of each commonwealth to establish and maintain public institutions for the treatment and cure of inebriety." One year previous to this the Association of Medical Superintendents of American Institutions for the Insane took the same ground, and further, "Resolved, that as, in the opinion of this Association, any system of management of institutions for inebriates under which the duration of the residence of their inmates and the character of the treatment to which they are subjected is voluntary on their part, must, in most cases prove entirely futile, if not worse than useless. There should be in every State and Province such positive constitutional provision and statutory enactments, as will in every case of assumed inebriety secure a careful inquisition into the question of drunkenness and fitness for the restraint and treatment of an institution for inebriates, and such a manner and length of treatment as will render total abstinence from alcoholic or other hurtful stimulants during such treatment absolutely certain, and present the best prospects of cure or reform of which each case is susceptible.

"Further, that the treatment in institutions for the insane, of dipsomaniacs, or persons whose only obvious mental disorder is the excessive use of alcohol or other

stimulants, and the immediate effect, of such excess is exceedingly prejudicial to the welfare of those inmates for whose benefit such institutions are established and maintained, and should be discontinued just as soon as other separate provision can be made for the inebriates."

In conclusion, I would remark:

(1.) That the continued use of alcohol produces structural changes in the brain and other portions of the body. These changes form the organic basis of habit and of various mental and physical disorders, and constitute a morbid condition which is in itself a constantly recurring plea for the continued use of the drug.

(2.) The habitual use of alcohol may be the result of indulgence for sensual or social gratification only, or it may be the outcome of an inherited or acquired impairment of the nervous system. It is important to distinguish between these two classes when possible.

(3.) The alcoholic habit leads to inebriety, a disease of the higher nerve centers, which requires proper medical treatment in institutions especially equipped for this purpose.

(4.) These institutions should have full legal powers of detention and control, but they should have no connection with public asylums for the insane.

(5.) Our laws should provide for the judicial commitment of the habitual or periodic inebriate to these special institutions, rather than to the county jails or insane asylums.

The Neural and Psycho-Neural Factor in Gynæciac Disease.*

By C. H. HUGHES, M. D., St. Louis,

Late Superintendent Missouri State Lunatic Asylum; Honorary Member British Medico-Psychological Association, etc.

IN strictly scientific sense there are no medical specialties. With gynecologist and neurologist alike, the whole organism, like the firmament with its stars of every magnitude to the astronomer, is the field for the play of their perceptive and reflective powers. The men who make the heavens their study might have among them a comet astronomer, but his occupation would only be gone and his results to the world would be quite *nil*, if he studied only comets.

The exigencies of our art in its practical aspects, however, assign us special departments of work and study. The alienist, the neurologist, the gynecologist, the ophthalmologist, the laryngologist, the otologist, etc., must survey and gather from the whole field, and pigeon-hole for utility in practice, all essential facts that sustain and perfect the special work of each.

With this view of our mutual and interdependent relationship in observation and work, I have accepted the invitation of your distinguished president to present a study, from my stand-point of survey of the common firmament of medical science, of the neural and psycho-neural factors in gynecic disease.

In the quoted language of one whom Medicine delights to honor, your distinguished president, "The neurological element of gynecic disease is a very important and much misunderstood factor," not so much, let me add, among the most advanced gynecologists of our time as among the many who follow the leaders afar off.

* Read by invitation before the Gynecological Section of the International Congress, held at Washington, D. C., September 7th, 1887.

The chief and most important neural factor in the consideration of the diseases of woman, whether specially and apparently exclusively implicating the uterus or its appendages or not, is the great sympathetic system with its potential actualities in disease and its morbid possibilities—direct, transmissible and reflex.

This great ganglionic nervous center, or congeries of nerve-centers and nerve-strands—connecting, afferent and efferent, the double ganglionic chain which hugs, entwines and penetrates, the spinal cord, and is interlaced and enchained in physiological and pathological function with the cerebro-spinal axis, so intimately that in some respects neither physiology nor pathology can yet tell us definitely where the influence of one ends and that of the other begins.

This system of nerves and ganglia, with its cerebro-spinal relations is also so closely and intimately related to the uterine system and special function that it makes possible the truth of the aphorism of French gynecology in many of woman's diseases "*l'uterus est le femme.*" The uterus and its associated sympathetic nervous system and the sympathetic system and the uterus, when either or both are implicated, come near being, in fact, in certain morbid states, all there is of the diseases of woman.

Yet the criticism of Albutt on the perverted view of the intimate neural relation of this part to the whole organism is here not *mal apropos* for our consideration :

How intimately this organ, or this system, is associated with the nervous system is well known ; but, unfortunately, the weight of our knowledge all leans one way—it leans to a curious and busy search for every local ill which may arise in the female pelvis, while blind oblivion scatters the poppy over every outer evil which in its turn might hurt the uterus ; nay, more, a resolute prejudice would deny that in the woman any distress can arise which owes not its origin to these mischievous parts.

The uterus has its maladies of local causation, its maladies of nervous causation, and its maladies of mixed causation, as other organs have ; and to assume, as is constantly assumed, that all uterine neuroses, or even all general neuroses in women, are due to coarse changes in the womb itself, is as dull as to suppose that the stomach can never be the seat of pain except it be the seat of some local affection, or that the face can never be the seat of *tic-douloureux* unless there be decayed teeth in the jaw. All mucous membranes, indeed, seem readily to betray nervous suffering by

relaxation or changed secretion; and I make no doubt whatever that a very large number of uterine disorders which are elevated to the place and name of diseases of the uterine system are but manifestations of neurosis. All neuroses are commoner in women than in men. Facial neuralgia is commoner in them, migraine is commoner; so is gastralgia, again, and the pseudo-angina. Not only so, but in the uterus they possess one organ the more, with its own rich nervous connections, and its own chapter of added diseases and neuroses; but to say that all these maladies are due primarily to uterine vagaries, is to talk wide of all analogies. * * *

A neuralgic woman seems to be peculiarly unfortunate. However bitter and repeated may be her visceral neuralgias, she is either told she is hysterical or that it is all uterus. In the first place she is comparatively fortunate, for she is only slighted; in the second case she is entangled in the net of the gynecologist, who finds her uterus, like her nose, is a little on one side; or again, like that organ, is running a little, or it is as flabby as her biceps, so that the unhappy viscus is impaled upon a stem, or perched upon a prop, or is painted with carbolic acid every week in the year except during the long vacation when the gynecologist is grouse-shooting, or salmon-catching, or leading the fashion in the Upper Engadine. Her mind thus fastened to a more or less nasty mystery becomes newly apprehensive and physically introspective, and the morbid chains are riveted more strongly than ever. Arraign the uterus, and you fix in the woman the arrow of hypochondria, it may be for life.—“Visceral Neuroses,” pp. 15, 16 and 17.

This so-called independent, but, with the cerebro-spinal axis, most intimately inter-related nervous system, connects on either side of the spinal column, as we know, with its encased cord, by means of double sets of filaments composed of afferent and efferent fibers passing between each of the sympathetic ganglia and the respective anterior spinal nerves, with which they correspond, as well as with most of the nerves attached to the medulla oblongata.

Ingoing or centripetal impressions, may, by means of these fibers pass on to spinal as well as medullary centers, as well as to the ganglia, and motor or inhibitory impressions may be sent outwards from cerebro-spinal centers so as to modify subordinate motor or secretory influences emanating from some one or other of the sympathetic ganglia. An afferent and efferent exchange and interchange of impressions and influences takes place between the ganglionic centers of the sympathetic system and the motor and sensory centers of the cerebro-spinal axis, shown largely in

secondary vasomotor and nutritive influences and secondary vascular changes in cord, in brain, in ganglionic center.

From the ganglionic cord on each side of the spinal column, numerous internal branches are also given off, which unite with one another, with those of the opposite side and often with filaments of the pneumogastric nerves, so as to form great plexuses, with or without well-marked ganglia, with which the various glandular organs and hollow viscera of the body are in connection by means of afferent and efferent fibers.

The sympathetic nerves usually accompany the blood-vessels and have special sets of fibers with vasomotor and vaso-constrictor functions in subordinate relation to spinal vasomotor centers along the whole length of the cord dominated by a higher center in the medulla below the fourth ventricle and probably higher up in the cerebral cortex, about the hippocampus major.

The sympathetic nervous system is an almost omnipresent anatomical factor and almost ubiquitous where there is visceral, vascular or glandular function. It is with the foetus in utero and the organ that encases it and the placenta that nourishes it, and upon its integrity depends not only the healthy evolution of the intramural germ of life, but the life of the mother—the relationship of foetus and mother—have their physiological ending, and the after-birth, having filled its mission, must come away, leaving fatally bleeding or securely-closed vessels behind, according to the integrity or otherwise of this important neural mechanism.

We may doubt the existence of trophic nerve-fibers or centers belonging to the sympathetic system, a fact I would not dare to deny, in view of what we certainly know of the conservative power of this wonderfully conservative mechanism of the human economy, but there is no longer room for doubt of the vaso-control of this system of nerve-influence over the caliber of arteriole walls.

We have in the sympathetic nervous system a system of nerves which influences circulation, controls the muscu-

lar movement of involuntary organs and affects nutrition. The activity of all the glandular organs, the movements of all the hollow viscera and gland ducts, and the nutrition of the tissues, depend upon its integrity. To its influence the uterus is no exception. On the contrary, it and its appendages and special functions are most intimately related to this neural mechanism, a mechanism which, to the human system, is what the law of gravitation is to the planetary. It holds the organs in their proper functional place, and maintains the equilibrium of the viscera, pelvic as well as abdominal, their special and inter-related movements, as certainly and as surely as the planets are held in their orbits. It contracts a uterus as it does a pupil. In its integrity it keeps hyperæmia and inflammation at bay. It is the omnipotent physiological hand of the organism in whose clasped or relaxed grip is held the issues of disease and death, or abnormal function and death. It is more or less deranged, locally or generally, in every form of disease. It is the presiding genius of evil in all morbid movement, either alone or influenced by its connections with the spinal cord or brain.

This is not an overdrawn picture, but has just warrant for every word in what is proven of its relations and power over health and disease.

While it is in the spinal cord and brain that we meet with those special symptom-groupings which have, by common consent, been referred to and described as referable to disorder of the sympathetic system, the pelvic viscera are no exception to its influence. The organs of generation are subject alike to this influence with all other parts of the body.

Its expulsive power, when intramural foes disturb it, as blood clots, or maternal placenta or fœtus; its contractile power over the smaller nonstriated muscles, as when a threatened hemorrhage is arrested; its contraction, when the mouth is too long and too violently dilated or its internal fundus irritated under certain circumstances, show us what a friend or foe in the combating of disease this

wonderful sympathetic system is ; how important is the neural factor in gynecological procedure, to the well or ill-being of the patient.

Like that omnipotent Providence which looks over and cares for the small boy without the small boy knowing it, the sympathetic system is always with the gynecologist, helping him out without his always knowing, whether by rapid dilation of the os tinæ he excites a vasomotor center and suppresses an excessive catamenia or by moderate utero-oral stimulation he accelerates a tardy flow ; whether by vaginal tampon or astringent injection, or a successful galvanic treatment he constricts the overlaid pelvic vessels, or whether by manual dexterity and these means combined the undue pressure of a retroflected uterus is removed from suffering and congested hemorrhoidal vessels and nerves, the effect is finally, through the neural or neuro-vascular mechanism and the gynecologist who despises not the influence of this vital mechanism, before as well as after the employment of his special means of relief, is wise.

Hitherto the nervous system has been too much ignored by gynecology, and it is encouraging to hear sensible gynecologists, as Goodell confesses, in his recent meritorious work, that too often disease of the nervous system has been mistaken for uterine disease.

This wondrous system and its allied cerebro-spinal connections has to do, more than the uterus alone, with the fate of woman in gynecological hands.

The gynescic diseases of woman are largely neural. They are also, it is obvious, even from this cursory glance at her organism and its inter-related cerebro-spinal and ganglionic system, both neural and psycho-neural, as well as simply gynescic.

If man is a bundle of nerves, as he has been defined, woman is a similar bundle, *plus* a uterus and its appendages, and this uterus is itself a bundle of nerves. If we study woman and her special diseases in this light we shall better comprehend her than if we study only her

diseases as limited to the uterus alone. And woman will better understand herself if she is taught that there is much more of her than the uterus and its appendages to become diseased. The womb disease crank among our patients, who is the bane alike of enlightened neurology and gynecology, will then disappear.

If we consider for a moment how large a proportion of the diseases of the nervous system, other than the structural diseases of the cord and brain, is due to derangement of the sympathetic nervous system, indisputably in their symptomatic expression, if not in their ultimate pathology, we are prepared to concede, *a priori*, the very significant part played in uterine disorder by this important mechanism.

Epilepsy, convulsions, migraine, exophthalmic goiter, unilateral hyperidrosis, progressive facial hemiatrophy, angina pectoris, asthma, diabetes, Addison's disease, gastralgia, enteralgia, neuralgia trifacialis, neuralgia coeliaca, neuralgia spermatica, ovaralgia, etc. (Eulenberg, Guttman, Bastian), cholera nostras, cholera asiatica, hyperidrosis, are either wholly or in part dependent on disorder of this system, not to mention other affections of the nervous system less completely related to the sympathetic, such as progressive muscular atrophy, psuedo-hypertrophic muscular paralysis, diphtheritic paralysis, reflex paralysis, neuroretinitis and glaucoma.

These latter named affections may be regarded as but partially and remotely related to the nervous system, but they would make far different and less significant and complete a symptomatic showing if it were not for the part played in their symptomatic expression by the sympathetic nervous system.

Bearing these facts in mind, and especially the relation of the sympathetic system to the vascular, let us turn briefly to that most important of the special functions of the female economy, menstruation, and take a neurological as well as hysterological view of its disorders and their successful management.

I will not discuss the question at length whether menstruation is a physiological secretion or simply a sanguineous or sero-sanguineous, or serous or serous mucous exudate, though I believe it to be a mixed exudative discharge, as such a discharge must, from its location and the membrane through which it passes, and which for a time holds (mixed with the disintegrated and degenerative mucous membrane of the uterus) the decidua menstrualis, if you please to so term it.

It has, nevertheless, vascular conditions behind it, a vasomotor system, afferent, efferent, and centers, which, when the intramural peripheral change is complete, closes the flood-gates, and holds them securely closed, till another cycle of intramural peripheral change comes round in the wonderful economy of woman's sexual system.

This vasomotor mechanism plays as important a part here as it does in permitting or arresting leucorrhea. A condition, which, as Legros and Onimus more than twenty years ago suggested, can be readily relieved by dorso-pelvic galvanization, a hint which gynecology, though tardy in putting to practical account, is now profitably using, through Apostoli's and Engleman's methods.

The derangements of menstruation are usually categorized by accepted writers as consisting chiefly of

Amenorrhea,
Dysmenorrhea,
Menorrhagia.

The first condition, when the ovaries are not absent, imperfectly developed, atrophied or otherwise markedly diseased, depends by common consent of gynecological authority, on what are called conditions of the general health. The blood is said to be deteriorated and nutrition is below par, and emotion, fright or grief, cold, heat, a sudden shock (psychical or physical) to the system may arrest the catamenial discharge at any time.

The psychical causes here enumerated, every one will concede, go downward from the cortex and medullary centers, on down the ganglionic chain, until the sympathetic

center having most to do with the catamenial flow is reached and arrest and suppression follow. In the same manner the shock of an intensely cold or hot pediluvium passes upwards and arrests the flow, just so a hot or cold vaginal douche at an opportune time, or the galvanic current, may, by constricting the open mouths of the menstruating vessels, put a sudden stop to their functions.

Now, the blood may be deteriorated in amenorrhea, the innervation of the cardiac and pelvic ganglia may fail in consequence, the blood may lose its stimulating power to excite powerful cardiac contractions, the heart's systole may become feeble and the *vis a tergo* become inadequate to propel the blood everywhere with sufficient force, and the catamenia may fail to appear from this cause, but another cause of amenorrhea in young females is an inherent neuropathic degeneracy, as the neurologist sees these persons, in which ancestral nerve overstrain, sexual or otherwise, has existed, or an acquired neuropathic decadence, of which habitual neurasthenia and sequent neurasthenia are the prominent symptoms.

Certain mechanical conditions causing atresia of the genital canal are conceded and need not be discussed; others are possible only through nerve apathies and the failure of the uterine walls to contract and expel even slight obstructions.

This apathy is afferent nerve insensibility or central motor atonicity. This is corrected through the advice of gynecologist and neurologist alike when the patient is advised to restore her constitutional vigor by change of air, exercise in the open air, agreeable mental diversion, nourishing diet, electricity and tonics.

Here are two kinds of neurotic—vasomotor—dysmenorrhea, which I take from a recent lecture by Goodell, the indirect neurotic, beginning in the uterus; the other, primarily neurotic, beginning in the brain. I give them with Dr. Goodell's comments. Both were sent to him for ovariectomy if necessary. Both recovered without it. The ovaries were saved, and that too by a reputable gynecologist:

A patient with excessive ovarian pain, with terrible dysmenorrhea and reduced to skin and bone. She had been bed-ridden for two years, and was unable to sleep or eat. I suggested to her physician, who accompanied her, that it would be best, in the first place to relieve the stenosis and cure the dysmenorrhea. The left ovary was also lower than normal. There was, however, no history of pelvic peritonitis, or of organic disease of the ovary. The constant congestion was sufficient to account for displacement of the ovary. The decision was, that she was placed under my care, and she came to this city. I dilated the cervix and put her on the "rest treatment," with massage and electricity. At the next period, the dysmenorrhea was excessive, for the uterus had not recovered from the bruises produced by the operation. The next period was better, and after this she continued to improve, and before long began to walk. Last week I received from her husband a most grateful letter. In these cases the symptoms point so distinctly to the ovaries as the seat of the disease that unless you are on your guard you will be deceived. *Any woman subjected to great mental trouble, is liable to manifest symptoms referable to the ovaries.*

A young girl, for six months, nursed her father, who was suffering with cancer of the lip. After his death, she broke down, and presented very exciting symptoms of uterine and ovarian trouble. She came to me to have a good diagnosis made by her physician reversed. He had told her that the whole trouble was due to nervous prostration, and I fully confirmed his opinion. Sometimes I err on the conservative side, yet all these cases are, in a measure, improved by the "rest treatment," and, if necessary, the operation can be performed subsequently.

In the first of these cases, as in the second, the dilatation of the os might have been omitted without jeopardy to the patient's cure, yet I believe the operation of divulsion for neurological reasons has its benefits, chiefly through the contractile tonicity of transmitted peripheral excitation over the vasomotor neural mechanism of the pelvic viscera.

The *malaise* and general discomfort, languor, lassitude, headache and backache, which so many women have during menstruation, are all nervous disturbances, and the pain of dysmenorrhea is likewise, whether congestive or inflammatory, neuralgic, spasmodic or ovarian, and secondarily, in mechanical dysmenorrhea.

But mechanical dysmenorrhea is less frequent than is commonly supposed; else why do opinions differ so much in regard to the seat of obstruction? Why does Barnes believe it to be usually seated in the ostinæ and accompanied by conical cervix; Graily Hewitt, an obstructed flexion, and Sims place it in the os internum?

A pin-hole orifice may permit a fatal hemorrhage, and flexion must be at an exceedingly acute angle to prevent this wide a passage. It might be possible in a retroflexion with an impacted rectum and coagula in the fundus uteri.

At all events, as it is not our special province to discuss this point further, we may say a very narrow canal would permit of painless menstruation, if all parts of the uterus are healthy. To have painful menstruation in an otherwise healthy uterus, we must have exalted nerve sensibility—uterine hyperæsthesia. Either this, if the neural factor attract our attention through the patient's pain, or such internal abrasions as expose sensory nerve-areas; the disintegrated decidua may contain fragments of exfoliated uterine surface and the exposed nerves may be mutilated by these masses or clots. In either case, or both, the sensory and the ganglionic nervous systems demand our attention. In treatment, the bromides and the other nervous sedatives, hyocianus, conium, gelsimium, belladonna, cannabis indica, galvanism, etc., with or without local interference.

The neuralgic and spasmodic and special ovarian varieties of dysmenorrhea call still more especially and imperatively for neurotic treatment, for obvious reasons. Of the recognized varieties of dysmenorrhea the membranous, the local inflammatory and the purely mechanical, may be said to belong exclusively to the gynecologist. The other forms fall often under the eye of the neurologist, and are treated by him incidentally; but to understand well and differentiate the proper treatment the gynecologist should be something of a neurologist, and the neurologist something of a gynecologist; or, better, they should take counsel of each other and reason together of the cause, relation and course of treatment. These specialties cannot well be divorced when woman's diseases are to be considered. They are as clearly related in practice often as are the nervous and the uterine systems of woman.

Ovarian dysmenorrhea and its antecedents and

sequences has a peculiar fascination for the neurologist; for, associated with it, he can often trace the morbid implication of ganglion after ganglion in the chain of sympathetic disease, and see the whole system as it were, successively traversed by this vicious chain. A wave of psychical irritation, beginning in a sympathetic center of the cerebral cortex, traverses downwards to the medulla, and further down to the cardiac ganglia, or down to the abdominal and pelvic; and the successive phenomena of hysteria and disturbed catamenia appear, or an ovarian congestion with ovaralgia leaps from ganglion to ganglion till these phenomena appear in reverse order. A similar order of progression may be observed in far graver maladies and proceed from or to the testicles in man. It is through the great sympathetic and its interwoven and cerebro-spinal connections that gentle, firm pressure on an ovary or a testicle may arrest violent nervous phenomena; that supraorbital nerve-pressure may sometimes do it; that strong peripheral irritations and violent mental emotions or strong cerebral impression, like hypnotism, may do the same thing.

Emmet, whether pioneering the hot vaginal douche in uterine therapeutics or tamponing the vagina, seeks to restore physiological control of uterine vascular states, both by local and constitutional means, and this is mainly done and permanently maintained through the vasomotor system.*

These cursory intimations suffice to remind us that the nervous system is no insignificant factor in the con-

* "We must appreciate that in no other part of the body have we such a matted network of vessels in the same space. In consequence of the erectile character of all the tissues, these vessels become varicose from any continued obstruction to the circulation, and have an almost incredible venous capacity. As a stream of water will saturate the ground and lose itself in a marsh, so will the circulation through the pelvic cellular tissue, and become in disease equally sluggish In this overdilated condition of the veins the balance is lost, and they are no longer able to return to the general circulation the quantity of blood received by them from the arterial capillaries. . . . Unless we can control the pelvic circulation, and at least impart a temporary tone to these vessels, it will be found in the end that little has been accomplished."—T. Addis Emmet, "On the Philosophy of Uterine Disease," *New York Medical Journal*, July, 1874.

sideration of the phenomena, relationship and successful management of gynæsiac diseases.

When woman greatly suffers from disease, apparently located in her uterus, but which is not recognizable in mechanically destructive change, sanguineous dyscrasia, constitutionally specific disease, or from common accidental violence or from coarse pathological change, or sudden inflammation, we may be assured that closer scrutiny will reveal in her nervous system, uterine, utero-ganglionic, utero-spinal, cerebro-spinal or sympathetic, adequate cause and explanation of her complaint, in most instances; and here neurology or neuriatry (if I may offer this term), and psychiatry may shed rays of light into shadowy places, not yet illumined by gynecology without this neural aid and alliance in research.* And neural disorder will often be found antedating, intimately accompanying, or closely following upon narrowly searching for them, certain uterine organic changes which are within the especial province of gynecological medicine or surgery.

If we but calmly consider how the uterus is physiologically trained to endure assault and violence, we must readily understand how difficult it is for woman to be gravely hurt in her neural mechanism, unless this nervous system becomes itself involved in disease. The great majority of woman's diseases, which reveal themselves in nervous disorder, are, of necessity, neuro-gynæsiac rather than purely gynæsiac, and the true gynecologist must become in practice, as observation enlarges, a neuro-gynæsiatrist, or healer of woman's diseases through her nervous system, as well as through her special and peculiar organs.

The field is too vast and our time too brief for exhaustive dissertation on such an occasion as this, and we are not confident of our ability for the task. But if this brief and hasty survey shall lead others further on to

* I am prepared to accept as orthodox, which I most cheerfully endorse, such neuro-gynæsiac treatises as that of Edward John Tilt, on "The Change of Life in Woman," a book which, in my humble judgment, is worthy of a prominent place in all neuro-gynæsiac thought.

richer finds, the present prospector will be amply repaid for this hour's effort.

We venture, in conclusion, to offer the following as the legitimate result of combined gynecological, neurological and general study of woman in relation to her diseases:

Modern gynecology, enlightened by past and present researches, comprehends the study of the whole organism of woman. Her neural organism and psycho-neural functions are so intimately related with her gynestic functions as to make it impossible to intelligently study and comprehend many of her special diseases without taking just account of the influence and relations of her cerebro-spinal and ganglionic mechanism and its functions, as well as of her distinguishing pelvic organs and of their special, exclusive and peculiar function.

Neither the gynecologist nor the neurologist can learn his local part well in practice any more than the actor on the stage by studying his part alone and exclusively, without reference to its relation to the others.

The successful study and consequent mastery of any disease requires a more or less comprehensive understanding of its intraorganic, as well as of its extraorganic environment.

To be successful physicians in any department of medical skill we must make the whole patient as well as the part engaging our special remedial attention, the subject of our investigation.

COLOR HEARING.*

By J. A. BARATOUX, Paris.

COLOR hearing is a phenomenon characterized by the simultaneous affection of two different senses by an excitation of one sense only; or, to state it otherwise, the sound of the voice or of an instrument interprets itself by some color. The special color excited by a particular sound is unvarying with the individual possessing this peculiarity. Thus some persons can give a color as green, red, yellow, etc., to every sound they hear. This phenomenon was described for the first time in 1865, by Verga, who reported the observations made by Chabaliér upon a patient in whom the sound of the vowel *a* excited the impression of black, that of *i*, *o* and *e* respectively the impressions of red, white and gray.

In the same journal in which these observations were published, Prof. Lussana wrote :

The time will come wherein, by the analysis of the associations which exist between the physical and nervous phenomena we shall find some law by which physiologists can explain the relations between colors and sounds.

M. Lussana designated this phenomenon as color voice.

In 1864 this author, having had the good fortune to meet two brothers, the Tubarchi, of Parma, who presented this phenomenon, he induced one of them to give him an account of their peculiarity.

The low tones of the human voice gave to these young men the impression of yellow, while the voice, in changing from the lower to the higher tones, took an ashy hue. The voice of young girls of from twelve to eighteen gave them the impression of azure; that of older women, violet, and that of women with a masculine voice, indigo.

* Translated and abridged from "Le Progres Medical," by Mrs. J. H. McBride, Milwaukee, Wis.

The higher notes of the voice, when sung, gave rise to the impression of red, and the deep notes black. Thus, the voice of a deep bass appeared to them black, and that of a baritone dark brown; of a tenor, chestnut; that of a contralto, light brown; of a mezzo-soprano, orange, and of a soprano, bright red.

This account suggested to Lussana that the organ for the perception of sounds and that of colors lay in contiguous convolutions, and in a memoir which he wrote he represented them in a figure.

In 1873 Nussbaumer published an article upon "Subjective Color Impressions Occasioned by Sounds." His own observations and those of his brother form the subject of his essay. Amusing themselves one day, they had a knife and fork suspended. They state that each time the knife and fork struck together the sound produced seemed to them to be accompanied by a color. Since then Dr. Nussbaumer has thoroughly studied these phenomena, and finds that each acoustic sensation was accompanied by a visual sensation, so that each sound was invariably accompanied by the same color.

There is a case also on record in which the inverse phenomenon was produced. The flame of a gas jet, burning unsteadily, produced the impression of the letters V and W, and when the flame was steady that of the letter I.

Of five hundred and ninety-six persons examined in Germany with respect to this color hearing, seventy-six were found to possess it; that is to say, twelve and five-tenths per cent. A large majority stated that *a* seemed black, *o* red, *i* white.

In 1881 the *London Medical Record* proposed the name Color Hearing for this peculiarity, but the term had previously been used in the *Cincianati Lancet*, and in the *Med. Neuigkeiten*. In France these facts were scarcely known until 1883, when Dr. Pedrono published the result of his examination of a professor of rhetoric who had this color hearing. At the same time MM. Pouchet and Tourneux published their views, and stated that this chro-

matic perception was without doubt derived from acoustic sensations in consequence of abnormal course of the auditory nerve fibers. Further, the author of the article "Retina" in the "Dictionary of Medical Science," reported the observations of Nussbaumer, accompanying it with some remarks in explanation of the phenomenon.

About this time Ughetti reported the case of a physician who saw *a* as black, *e* yellow, *o* white, and *ow* brown. A case was also reported by Antonio Berti of a person seeing *e* gray and *ou* dark blue.

In persons possessing the color hearing a confused noise causes a somber-colored image, gray or brown, as undecided as the noise producing it. Thus, the noise of a cannon at a distance produces only a luminous sensation without color. If the sound is louder the color appears clearer, without however, changing the tint. If it become whistling and more and more sharp the sensation of color passes from yellow to gray and blue.

Dr. Grazzi reports a case: A Dr. Franceschini had observed a hysterical subject having previously had eye and ear disease. When she heard a carriage pass her window she immediately perceived the color green. Ughetti cites the case of a person in whom the whistle of a steamboat caused an image that passed from dark red to the brightest shade of that color, and the whistle of a locomotive an image changing from red to white. In this last case when the tone of the whistle varies the color changes.

Each musical instrument gives rise to the sensation of a special color. Thus, to the professor of rhetoric, of Pedrono, the sound of the clarionet is red, that of the piano blue and of the organ yellow. A doctor observed by Bareggii perceives the sound of the trumpet red, that of the clarionet and of the flute yellow, that of the violin blue, and that of the violoncello and bass viol violet. To Ughetti's subject the sound of the flute is red, that of the clarionet yellow, of the trumpet and of the guitar golden yellow, and that of the piano white.

M. P., who was examined by M. de Rochas, says that

in him the sound of the big drum excites the impression of chocolate, the trumpet bright yellow, the hautboy, the flute and the piano of different tones of blue, the violin and the pipe black, as much more intense as the sound is shrill and sharp.

In some persons certain numbers correspond to certain colors. To M. P. 1 is black, 2 gray or blue, 3 yellow, etc. The cases of two women have been published who associate colors with names, but the colors are not the same for both. Similar cases have been published by physicians.

The engineer of whom I spoke above gives colors for the days of the week. Monday is gray, Tuesday, Saturday and Sunday dark red, Wednesday and Friday white, Thursday, yellow.

It is in infancy that the peculiarity of color hearing is developed. Almost all who have been examined state that they have always possessed this peculiarity. There is only one exception reported by M. de Rochas, that of an aged pupil of the polytechnic school, who lost this faculty when about thirty years of age, when his mind was exhausted from mental overwork.

When we consider the relative number of the observations that have been made with regard to color hearing, we must conclude that it is more common than was at first supposed. Of five hundred and ninety-six persons examined in Germany seventy-six were found to possess it. Though M. de Rochas found only three in fifty he states that from further investigations he believes it to be not uncommon in France. Many persons possessing it do not speak of it, thinking it normal, and others avoid mentioning it for fear of ridicule. It seems to be more common among men than women, and is often found in different members of the same family.

(The remainder of the article is devoted to a recapitulation of views concerning the localization of the color sense. The author holds that color hearing is physiological, and that it is due to irradiation of sound impressions to the sight center, causing this latter to functionate.)

SELECTIONS.

NEUROTHERAPY.

HYPNOTISM IN THERAPEUTICS (*Berlin Medical Association—Meeting of October 26, 1887*).—Dr. Moll states that he has seen at least one thousand single experiments, which enable him to affirm, that a large part of all that has been written about hypnotism, howsoever unlikely it may sound, is perfectly true. According to Senator, we have to view hypnotism as a condition in which an individual is deprived of his own will and becomes the passive instrument of the manipulator. Braid, of Manchester, has published, in 1843, the first treatise on hypnotismus, trying at the same time to turn it to account as a therapeutic agent. He also discovered *suggestion*, and described it. "Suggestion" means any psychical action on the hypnotized subject. Moll exemplifies this in the following manner: A subject is just speaking; the experimenter calls out to him: "You can't speak any more, you have lost your language!" The subject continues to perform some motions for the purpose of speaking, but is unable to do so.

Recently, thorough investigations have been commenced in France, particularly in the Satpêtrière, of Paris, under Charcot's direction. They distinguish a major and a minor hypnosis; the former alone is typical and is met with in hysteria. Three stages of hypnotism may be distinguished:

1. *Lethargy*. It may be produced by causing the subject to fix his looks on some object not too much resplendent. The lethargic individual seems to be asleep; his lids are closed; on raising them, they drop back without power. In this state there exists a hyperexcitability of the nerves and muscles.

2. *Catalepsy*. For this condition, an individual can be given any arbitrary position, in which he continues without change. The eyes are open, the look is staring. The individual can be transferred from catalepsy to lethargy by closing his eyes.

3. *Somnambulism*. The individual has his eyes wholly

or half closed, and resembles a somnambulist. There is no excessive excitability of muscles, but by slight irritations of the skin the subjacent muscles may be subjected to contraction. This state can be produced by gentle friction or pressure on the vertex.

Moll himself has succeeded in curing, by means of hypnosis, neuralgias in patients who had resisted prolonged electric treatment, embrocations, etc., and in restoring some neurasthenics to psychical repose; also in rapidly freeing from headache, persons who had not received any advantage from antifebrine nor from antipyrine.

Yet, hypnotic treatment has also its inconveniences. It is not possible to hypnotize all individuals, nor, in case of success, to have the hypnotic condition always in sufficient intensity, or there is no improvement in spite of hypnosis; the latter result is not an infrequent one. Oftentimes, hypnotization is followed by a condition of weariness, but this condition can soon be overcome. It is self-evident that all psychical emotions, as in public exhibitions were frequently met with, have to be avoided.

The time has not yet arrived clearly to define the indications for hypnotic treatment; taking into account the literature of the French, this method seems to be applicable to hysteria, neuralgia, psychical conceptions, insomnia, etc. It is stated that hypnotism has already been successfully applied in morphiophagy, alcoholism, enuresis nocturna, dysmenorrhea, etc. In articular rheumatism, pain has been greatly appeased before any medication was given. Whether the fundamental disease will be modified in this way, is, of course, another question; yet the possibility of organic modifications cannot be excluded; for any part of the body subjected to concentrated attention, will alter its conditions of alimentation. Braid affirms having succeeded in healing an abscess of the cornea by means of hypnosis, and some modern publications clearly demonstrate how large an influence suggestion may exercise on the organism. In one individual the following result was obtained: On informing him that at a certain time a certain determined place of his arm would be subjected to bleeding, it was observed that this place first commenced reddening, then showing in relief a letter determined beforehand, and finally some drops of blood being squeezed out. The miracle of Louise Lateau might thus be explained quite naturally. In another instance, some postal stamps were

posted on the back of an individual who was told it was a blister-plaster. There was indeed a blister forming on this spot, and in another case a simple hyperæmia. On the other hand, blister plaster was spread out on cigarette paper, and it was applied with the statement it was linen paper; in this case, no blister, it is asserted, was produced. A piece of cold iron was placed in the hand of another person, suggesting that it was glowing: the hand showed blisters from burning. Moll corroborates, from his own experience, the fact that some persons, by the suggestion of taking ammonia, are being made to sneeze; and other persons, by the suggestion of taking alcohol or champagne, are being subjected to a condition like intoxication. Yet, it seems that a certain hypnotic education is necessary for all the observations and experiments.

On the other hand, mere negation is no longer admissible, although until now it was not possible to give a safe explanation of the successes of hypnotic treatment. There is certainly no panacea in hypnotic treatment, but the results, reported from France, are altogether highly encouraging. Voisin, in the Paris Saltpêtrière, has obtained good results in cases of interrupted menstruation by the simple suggestion that menses would appear on such or such a determined day. Yet, the actual value of hypnotism as a therapeutic agent will not be established by personal impressions: it will have to be measured by the number of failures which each experimenter will meet with. Future impartial observation will be required to settle this question of the therapeutic value of hypnotic treatment.—Abstract from *Deutsche Medical Zeitung*, Berlin, in the *Pacific Medical Record*.

TANSY RABIES *vs.* HYDROPHOBIA.—As is now well known, the essence of tansy (*tanacetum vulgare*) when intravenously injected into rabbits produces a rabies, which in all its pathological phenomena is apparently identical with that produced by the inoculation of true canine rabietic virus. M. Peyrand, who has given this subject a good deal of study, and has made several reports thereon to the *Academie des Sciences*, states that chloral hydrate combats this induced tansy rabies, and effectually neutralizes it. In a very recent paper upon the subject read before the *Academie*, he states that rabbits in which tansy rabies had been produced, and which were subsequently cured by means of chloral-hydrate, are no longer

susceptible to the action of true rabietic virus. A series of experimental inoculations were made with the view of demonstrating this proposition, and the results are summarized in the report. Of the rabbits first inoculated with tansy rabies and cured by chloral not one showed the slightest symptom of rabies when inoculated with the true virus, while all those which were inoculated with the latter, without having gone through the tansy and chloral treatment, died with true hydrophobia. Eight months have passed since the experiments, and none of the rabbits which went through the ordeal above mentioned have as yet shown any symptoms of rabies. These facts are suggestive of possibilities in the direction of preventive inoculations, but as yet have no direct value in the therapeutics of rabies.—*National Druggist*.

THEINE.—One of the most remarkable of all the local analgesies which has been before the profession, is theine, the alkaloid of Chinese tea. Attention was first drawn to this agent by Dr. Mays, of Philadelphia, in an article on "The Physiological and Therapeutic Action of Caffeine, Theine and Guarine."

It was shown from experiments made on frogs, that theine paralyzes the nerves of sensation, and this impairment of sensibility proceeds from the center to the periphery, and not like that of brucine, from the periphery to the center.

Among the extraordinary features of theine is its localized anæsthesia below the seat of injection. There can be no question about its general absorption; but there has occurred no evidence in the experience of its use to show that it produces any systematic disturbance, even in maximum doses. Its absorption and distribution by the blood probably play a secondary rôle, for it seems to exert its influence on the trunk of the nerve, at the point of its injection, and then to distribute itself downward along its course in spite of these functions. This localized action of theine naturally gives it an immense advantage over morphine, atropine chloral, and other agents of that class, which principally act by intoxicating the central nervous system.

The leaf of Chinese tea has formed a domestic drink for many centuries, and its alkaloid, theine, has been known for nearly three-score years; yet no one suspected that it contained an analgesic action more remarkable than that of cocaine.—*Dental Review*.

NEUROPATHOLOGY.

THE WOMB AND NERVES.—The impression is very widespread, and is by no means wholly confined to the laity, that the womb is a sort of nervous center from which proceed nearly, if not quite, all of the nervous disorders with which its unfortunate possessor may be afflicted. Doubtless that very aggressive class of specialists yclept gynecologists, who have brought themselves into such prominence within the past two decades, are very largely responsible for this impression. The importance with which they have vested their vocation has brought even the common practitioner to regard the organ which is the object of their attacks, as the center around which the whole woman revolves. Of course there is no warrant in the nervous connections of the womb and its appendages for thus regarding it, but that matters not. The error is not the only one, which in the very face of reason, has long been dominant. It has, however, in all probability, been more productive of injury to woman than any other; and if the tale of the cuttings, and parings, and stitchings, and cauterizations, and removals which have been practiced on the uterus, tubes and ovaries, for the relief of nervous disturbances, could be but half told, the record would be appalling. The signs of the times, however, are encouraging, and the indications are that the womb will soon lose its prominence in the etiology of the neuroses. Dr. Battey, who may be said to have originated the removal of the ovaries for the relief of nervous affections, took alarm shortly after, and has been been doing his best ever since to prevent the logical result of his earlier declarations. But his operation took quick hold, and the aspiring gynecologist who had not unsexed his half-a-score or more of confiding women, soon became an object of contempt even in his own estimation. It was, therefore, some time before the tide could be stemmed, but the prospects for the poor daughters of Eve are now yearly becoming brighter, and the chances are that before long even the gynecologist will be brought to the belief that the woman is not all womb. The evils of specialism have been peculiarly conspicuous in this direction and the resultant injury to womankind has been incalculable.

A paper by Dr. Grace Peckham, read before the New York Academy of Medicine (*Medical Record*), is replete with interest in the above connection. It opens with a

statement of the fact that the impression is very general that "a woman's organs of generation are the centers from which emanate the most terrible and awful nervous explosions." The literature on the subject certainly warrants this impression, since our most eminent gynecologists are in the habit of tracing weird reflex neuroses to the genital tract. Four years ago Dr. Peckham commenced making observations with a view to testing the correctness of this general impression, and her paper is based on the history of five hundred and seventeen cases, of which she gives a very exhaustive analysis. We have space only for her conclusions:

First.—Nervous disturbance outside of the pelvis is not nearly as frequent in disease of the uterus and its appendages as is generally believed. The impression that one severe case makes effaces that of dozens of simpler ones. Moreover, gynecologists who are men, are apt to meet only the severer cases, since women suffer long and in silence before undertaking a treatment which does such violence to their natural modesty. The eminent specialists who have done most of the writing on this subject encounter the most severe and difficult cases, and their object often, in writing, is to present peculiar and extraordinary cases.

Second.—it has been shown that mere mechanical displacements give rise to almost no disturbance in complete prolapsus. In the other degrees of prolapsus the pain comes from the pulling and stretching of the tissues. Retroflexion occasions the most nervous disturbance outside of the pelvis.

Third.—It can be seen that the amount of disturbance is in every way proportioned to the amount of uterine tissue involved, and the length of time the disease has continued.

Fourth.—It is plainly shown that the reflex nervous symptoms are no more severe nor extensive that arise from displacements and inflammatory conditions of the uterus and its appendages, than would be produced by pathological conditions of the same extent and the same chronic character in other parts of the body. When these are present a previous neuropathic tendency, either acquired or inherited, probably has existed, and the uterine trouble is generally extensive and of an aggravated nature, which, acting on the central nervous system, produces a display of disturbed innervation at the periphery,

or of disturbed cerebation, which results in neuralgias or hysterias.

Fifth.—In these studies the effects of uterine trouble upon the eyes have been carefully considered. Three cases, two of endometritis and one of inflammation of the broad ligaments, are found. I have met others, but in these, and looking over the literature, I have reached the conclusion that the eye trouble is generally due to anæmia and general asthenia, and it is doubtful if it can be proven that such troubles with the eyes occur more often in uterine diseases than in others which would produce a similar state of anæmia and depression of the general bodily strength.

Sixth.—Many nervous symptoms are not present *because* of uterine disease, but are due to the constipation and anæmia with which it is so often accompanied.

Seventh.—Nervous disturbances outside of the pelvis are much more prevalent among the more highly organized women of the higher classes than among those of the lower, who have less time to think of themselves, and much less vivid imaginations.

Eighth.—The attention should be called to the fact that sacral neuralgia often simulates uterine disease; the pain is very like that described in many of the inflammatory conditions with displacement, and even with ovarian trouble. It is often associated with pain extending down the leg, and pain referred to the sides and the back, and it is also accompanied with general nervousness. I recall, now, three cases of sacral neuralgia in which the nerves were tender at their exit on the right side, and the great pain complained of was on the left side.

The minute anatomy of the nerves of the pelvis, and its relations with the so-called sympathetic, are far from precise, and we must turn, as has been done in the absorbing questions of brain localization, to clinical data to substantiate hypothesis and theory. I am inclined to think that most of the reflex troubles leave the pelvis through the nerves connecting with the spinal cord, and are thence reflected to the brain, and from the brain to the periphery.—*The Medical Age.*

THE NATURE OF NARCOLEPSIA—Six years ago Gelineau described a rare form of neurosis, characterized by a sudden and irresistible desire to sleep, lasting but a short

time and recurring at more or less prolonged intervals. He reported at the time fourteen cases.

This description has brought to light from the notebook of Dr. Arthur Wynn Foot, which may be found reported in full in the *Dublin Journal of Medical Science*, an interesting case of this disease, which he proposes to call hypnolepsy.

Graves was familiar with this disease, and described a case, calling it simply lethargy, before Gelineau described it. Gelineau made no mention of Graves' typical case. It ought to have been called Graves' sleeping or narcoleptoid disease.

Wynn gives the family history of his case, which is markedly neurotic. The patient had an imbecile aunt, an epileptic sister and an insane brother.

This disease is closely allied to epilepsy and epileptoid with a probable malarial complication. Readers of the *Review* who may have access to back numbers of the *ALIENIST AND NEUROLOGIST* will find this view set forth more in detail than would be in place here.

Dr. Wynn's patient was a healthy gentleman, æt. eighteen, a hundred and thirty-three pounds in weight, dark complexion; his eyes were lustrous and rather prominent; had a good color in his cheeks; his expression was candid and intelligent. He did not use alcohol, opium or tobacco, and I came to the conclusion that his statements as to his being unacquainted with any form of sexual indulgence were to be regarded as truthful.

In December, 1874, he came to get cured of a sleepiness from which he had been suffering for a year and a half. This sleepiness came on every day at the same hour, between two and three o'clock, whether he was sitting, standing or walking about, and quite irrespective of meal-times. He felt it coming on, and was sensible of its approach but powerless to resist it. Unless he was forcibly roused from it by pulling, shaking or shouting at him, it continued for two or three hours, when it disappeared gradually. While in the sleepy state he can perform automatic movements but in an imperfect manner. If it comes on while he is speaking or writing, he talks incoherently or writes nonsense; the pen is apt to drop from his hand when writing, and the knife and fork at dinner, when the sleep-seizure takes him. When overtaken by it walking in the street, he can usually find his way home, but has lost his way and has been observed to walk

unsteadily and knock up against people. When in the somnolent state he can see and hear, but not distinctly. He says he is annoyed by the people looking at him in a railway carriage, the motion of which will make him fall asleep at other times as well as in the afternoons, so that he has frequently been carried past the station he intended to get out at. Coming across the river at Waterford he has stepped out of the boat into the water before he had reached the landing slip. Even the excitement of sailing his boat single-handed did not prevent the sleep coming on at its usual hour, and he has beached his boat on a tidal slob, and had to remain there for hours, when out sailing by himself, from not minding what he was about. He falls asleep at the piano in the middle of a piece of music. The effect of forcible disturbance of his sleep was to produce such irritability and passionate excitement that his family did not resort to it, but let him sit back in a chair till it passed off. There was never any form of convulsion or spasm observed to attend the sleepiness.

This state of things had been going for a year and a half before I saw him, and continued with little variation for three years, during which I saw or heard from him frequently. He referred its commencement to a particularly warm day in May, 1873. He had been exposed to the sun all this day, and the sleep seized him while sitting under a tree. So natural an occurrence did not strike him as at all surprising. He continued to get sleepy daily about the same hour, yet did not become uneasy about it till a year elapsed.—From Dr. Hughes's "Report on Nervous Diseases" in *Weekly Medical Review*.

THE NEURAL THEORY OF HEMOPHILIA.—Dr. Thomas Oliver, in a late number of the *London Lancet* on this subject, details the history of two cases. In that article Dr. Oliver, after trying to divide the physiological responsibility for hemophilia with the blood-vessels, the blood and the state of the vasomotor system, concedes great prominence to the nervous system in this disease, making no mention, however, of previously recorded similar statements.

Dr. Oliver says: "Everybody regards hemophilia as most distinctly hereditary, and what does that mean? I take it to mean that during intrauterine life the development of the cardio-vascular system is in some way or other interfered

with, owing to the transmission of some ancestral peculiarity, the result of which is that not only is the blood itself altered and the tubes which carry it, but the nerve centers, which in later days regulate the distribution of the blood (states of dilatation and contraction of the arteries, the movements of the heart, and which must be, therefore, all closely associated together in their development) never reach a state of perfection. Complete control over the arteries and capillaries is, therefore, never the function of the vasomotor center in hemophilia, and that this is the case is shown by the sphygmographic tracings. There is low arterial tension. Hence, when bleeding occurs the arteries do not contract sufficiently upon their contents, owing to a want of proper impulses from the vasomotor center. I know not why the gums are the most usual seat of hemorrhage in these cases, unless it depend upon the rich vascular supply of their mucous membrane and the scanty support of the walls of the vessels—membranes, too, which are exposed to variations of atmospheric pressure and to all kinds of injury received during mastication."

On microscopical examination, Oliver found the muscular fibers of the heart of one of his patients smaller than those of a man of his age, but healthy. The aorta was thinner than it should be, but on minute examination it was found to be quite healthy.—From Dr. Hughes's "Report on Nervous Diseases" in *Weekly Medical Review*.

NERVOUS ORIGIN OF RHEUMATOID ARTHRITIS.—At a meeting of the Royal Medical and Chirurgical Society, Dr. Archibald E. Garrod introduced a paper, entitled "A Contribution to the Theory of the Nervous Origin of Rheumatoid Arthritis," of which the following is an abstract (*Lancet*, November 26, 1887): "Some of the arguments which have been put forward in support of the view that rheumatoid arthritis is a disease of nervous origin are examined in the light of a large number of cases. The statistics given are based upon a series of five hundred cases. Arguments are adduced in support of the following propositions: 1. That the causes of rheumatoid arthritis are such as might be expected to act upon the central nervous system. 2. That the distribution of the lesions is such as would be likely to result from nervous lesions. 3. That the distribution of the lesions is similar to that of certain arthropathies of spinal

origin. The influence of heredity is first discussed. In two hundred and sixteen cases out of five hundred there was a family history of joint disease, sometimes of more than one variety. There was a history of gout in eighty-six, of probably gout in ten, of rheumatism in sixty-four, and of other conditions which may be classed together as probably rheumatoid arthritis in eighty-four. These figures can only approximate to accuracy, as they are based upon information given by the patients. The influence of uterine causes is next discussed, and it is shown that when the female cases are arranged according to the age of the patients when the disease commenced, there is a steady increase in numbers up to the period of the menopause and a steady decrease after that period. Among the male cases there is no such regularity. Of the five hundred patients four hundred and eleven were women and only eighty-nine men. The influence of anxiety and care, mental shock, injuries, damp, cold, and previous rheumatic attacks is discussed, and each of these is shown to have a share in the causation of the disease. Stress is laid upon the extreme symmetry of the joint-lesions in rheumatoid arthritis, and some examples are adduced. Reasons are given for believing that there is a tendency for the joint-lesions to advance up the limbs from the periphery towards the trunk. This order of invasion is by no means constant, but in particular instances it is well marked. In the localized form of the disease it is of course absent. The knees rank only second to the hands in liability to rheumatoid arthritis. Lastly, it is shown that there is a close resemblance between the distribution of the joint-lesions in rheumatoid arthritis and in the recorded cases of arthritis following spinal concussion, whereas in more local spinal injuries one or more large joints are usually affected, as in *tabes dorsalis*. The associated nervous phenomena, such as muscular wasting, increase of tendon reflexes, etc., are regarded as secondary to the joint-lesions, and as therefore lending no efficient support to the theory of the nervous origin of rheumatoid arthritis."

Sir Dyce Duckworth agreed with the views expressed in the paper. The morbid anatomy of this disease required very much more investigation than had at present been given to it.

Dr. Ord had been interested in this subject for many years. The joint-troubles were to be regarded rather as symptoms than as the whole disease. He came to the

conclusion that nervous influences had a great deal to do in the causation of this disease. He believed that nervous influence was reflected from the uterine organs to the spinal cord and on to the joints. The cord also exerted a primary influence. Injury might lead to a joint-affection, and then the nervous system tended to propagate the joint-change to other joints. He compared rheumatoid arthritis to progressive muscular atrophy. In a case of chronic cervical pachymeningitis there was much muscular and cutaneous wasting, and later a remarkable degree of chronic osteo-arthritis developed. In another case of spinal injury joint trouble followed at a long interval the muscular wasting.

Dr. Buzzard said that in association with Charcot's disease of the joints there was a much clearer evidence of disease in the central nervous system than was the case in rheumatoid arthritis. He alluded to the various crises and paroxysmal secretions occurring in *tabes dorsalis* as evidence of the involvement of the central nervous system in most cases. Eight years ago he promulgated the theory of a joint center in the medulla oblongata, and he brought forward arguments to show that acute rheumatism might be an acute affection of the medulla oblongata.

Dr. Herringham alluded to the belief which he shared that cold and damp were very potent causes of rheumatism and rheumatoid arthritis.

Dr. Garrod, in reply, said he should have classed Dr. Ord's case of myotrophy as one in which the arthropathy was due to definite nervous lesions, and therefore not of the same category as rheumatoid arthritis.—*Therapeutic Gazette*.

PSYCHIATRY.

IDIOT SAVANTS.—Before the section on Psychological and Neurological Medicine, of the recent International Medical Congress, Dr. Langdon Down entertained the section with a very entertaining talk on this subject.

The following are some of his illustrations of these interesting patho-physiological mental phenomena which were communicated to the *British Medical Journal* before the meeting of the Congress by the distinguished alienist of Morningside. Dr. Down makes no reference to America's

most remarkable idiot savant, Blind Tom, the world's musical prodigy, so we judge he has not seen the black idiot display his most astonishing powers, considering the otherwise general make-up of his intellect.

Dr. Down applies this term to children who, though feeble-minded, have special faculties, capabilities and even aptitudes for extensive cultivation in certain directions. He had one youth under his care who could build exquisite model ships from drawings, and carve with a great deal of skill, who yet could not understand a sentence, who had to have his food cut up for him, and who, when writing to his mother, copied *verbatim* a letter from "The Life of Captain Hedley Vicars," by Miss Marsh, although it had not the slightest appropriateness in word or sentiment. Another has been under his care who can draw in crayon with marvelous skill and feeling, in whom, nevertheless, there was a comparative blank in all the higher faculties of mind. A boy came under his observation who, having once read a book, could evermore remember it. He would recite all the answers in "Maggall's Questions" without an error, giving in detail the numbers in the astronomical divisions with the greatest accuracy by a simple process of verbal adhesion. Dr. Down once gave him Gibbon's "Rise and Fall of the Roman Empire" to read. This he did; and, on reading the third page, he skipped a line, found out his mistake, and retraced his steps. Ever after, when reciting from memory the stately periods of Gibbon, he would, on coming to the third page, skip the line and go back and correct the error with as much regularity as if it had been part of the regular text. Later on, his memory for recent reading became less tenacious, but his recollection of his earlier readings never failed him. Another boy can tell the tune, words, and number of nearly every hymn in "Hymns Ancient and Modern." Often memory takes the form of remembering dates and past events. Several children under his observation have had this faculty in an extraordinary degree. One boy never fails to be able to tell the name and address of every confectioner's shop that he has visited in London—and they have been numerous—and can as readily tell the date of every visit. Another can tell the time of arrival of all the children at an institution, and could supply accurate records in relation to it if needed. Another knows the home address of every resident who comes under his

observation, and they are by no means few. The faculty of number is usually slightly developed with feeble-minded children, whilst memory is fairly well developed; and yet he has had under his observation cases where the power of mental arithmetic existed to an astonishing extent. One boy, about twelve years of age, could multiply any three figures with perfect accuracy, and as quickly as he could write the six figures on paper; and yet, so low mentally was he that, although having been for two and a half years in the almost daily habit of seeing me and talking to me, he could not tell my name. Another boy, who had recently been under his observation, can multiply two figures by two figures; while another can multiply rapidly two figures by two figures and a short time since could multiply three figures by three figures, but since an epileptiform attack has lost this faculty to some extent. None of them can explain how they do it, that is, by what mental process.

It has appeared to him, however, when by rare chances they have made a mistake, and some hesitation has arisen, the plan has been to clear off the multiplication of the higher figures first. Improvisation is an occasional faculty. He had a boy under his care, who could take up a book, pretending to read—an art he had not acquired, and improvise stories of all kinds with a great deal of skill, and in any variety, to suit the supposed tastes of his auditors. Memory of tune is a very common faculty among the feeble-minded; they readily acquire simple airs and rarely forget them. He has had one boy under his observation who, if he went to an opera, would carry away a recollection of all the airs, and would hum or sing them correctly. In none of the cases of “idiot savants” has he been able to trace any history of a like faculty in the parents or in the brothers and sisters, nor has he had any opportunity of making a necropsy, except in one instance. This was in the case of a boy who had a very unusual faculty, of which he has never since met another example, namely, the perfect appreciation of past or passing time. He was seventeen years of age, and although not understanding, so far as he could gather, the use of a clock face, could tell the time to a minute at any part of the day, and in any situation. He tried him on numberless occasions, and he always answered with an amount of precision truly remarkable. Gradually his response became less ready. * * * His health

became enfeebled, and the faculty departed. At a necropsy he found that there was no difference in his cerebrum from an ordinary brain, except that he had two well-marked and distinct soft commissures. * * *

This is an interesting subject, and indicates from a clinical stand-point, what physiological experiments and pathological demonstrations tend to establish, viz., the existence of psychical as well as psycho-motor cerebral localization.—*Weekly Medical Review*.

SANE ONLY DURING PREGNANCY.—During the past year five cases of mental disease were admitted to Dr. Whitwell's private hospital, San Francisco, two of mania, two of melancholia and one of paralytic dementia. There have been seven confinements, one being under the care of Dr. G. E. Davis. The interesting point in this latter case was the fact that the woman had had one child before and was sane only during pregnancy.

FORENSIC PSYCHIATRY.

PSYCHIATRIC PROGRESS IN THE COURTS.—An epoch-making decision in forensic psychiatry has recently been given by Judge H. M. Somerville, of the Alabama Supreme Court. In principle it is an extension of the right and wrong test modified by the influence of modern psychiatry. It is essentially the same as the European continental code, that there can be no crime where, by mental disease, free determination of the will is impaired. The New Hampshire decision, making insanity a matter of fact for the jury to determine, not a matter of law, and the corroboratory Illinois decision, were great scientific advances on the mob-law right and wrong test promulgated, through the outcry of sensational newspapers, by the English judges at the bidding of the House of Lords, which, as Judge Somerville shows, was an innovation on the English law as laid down in Oxford's case. A Sergeant Ballantyne says that these judges, instead of saying what the law was, made law at the bidding of a mob. Their "law" was forced by newspaper sensationalists into dominance in Anglo-Saxon countries. New Hampshire, Illinois and a few other States adopted the scientific principle that the responsibility of a lunatic was a matter of fact and

not of law, and that it was incumbent on the State to prove responsibility beyond a reasonable doubt. With the latter principle Somerville's decision does not agree, although it gives the first clearness and scope. As the judge was for twelve years a trustee of the Alabama Insane Hospital, superintended by one of the ablest American alienists, Dr. Bryce, this decision is obviously the result both of a knowledge of the law and of the actual clinical aspects of insanity. Judge Somerville, after a voluminous citation of authorities, decides that the inquiries to be submitted to the jury in every case where insanity is pleaded as a defence, are: "Was the defendant at the time of the commission of the alleged crime afflicted with a disease of the mind, so as to be either idiotic or otherwise insane? If such be the case, did he know right from wrong, as applied to the particular act in question? If he did not have such knowledge he is not legally responsible if by reason of the duress of such mental disease he had so far lost the power to choose between right and wrong and to avoid doing the act in question, as that his free agency was at the time destroyed; nor if at the same time his alleged crime was so connected with such mental disease in the relation of cause and effect as to have been the product of it solely."—*Medical Standard*.

GALVANIZATION OF THE THYROID IN EPILEPSY.—Sighicelli, having noticed that thyroidectomy produced convulsions of an epileptiform nature in animals, has used galvanism of the thyroid in the treatment of epilepsy. Of seven cases that he reports, in two there was an evident diminution of the epileptic access. A third case was completely cured; that is, the cure has lasted for several months.—*L'Ectiothérapie*, January, 1888.

[The therapeutic influence is exerted through the sympathetic system, in all probability, epilepsy being a vasomotor lesion whose centers are in the cortex and medulla. We have long employed cephalic galvanizations in the treatment of epilepsy on this hypothesis, and thus cured many cases.—ED.]

SIMULATION OF INSANITY BY THE INSANE.—At a recent meeting of the Chicago Medico-Legal Society Dr. D. R. Brower read a paper on the "Simulation of Insanity by the Insane," citing the cases reported by Drs. C. B. Burr, Chalmers, Hughes, Kiernan, Monteyel, McBride, Nichols,

Pelman, Ray and Spitzka, supplementing them by others coming under his own observation.

Dr. Kiernan said that there was too much stress laid on simulation as an evidence of insanity. Dr. Brower deserved credit for calling attention to this important element in diagnosis.—*Medical Standard*.

OCULO-NEUROLOGY.

THE EYE OF THE ADULT IMBECILE.—Dr. Chas. A. Oliver has made the following observations and conclusions, based upon the examination of the eyes of twenty young adult male imbeciles seen at the State Hospital for the Insane at Norristown, Pa., and gives them as a contribution to the subject of the significance of the local conditions so generally found in adolescent and young adult eyes which are asthenopic and undergoing changes in refraction, the whole being an abstract of a paper read before the American Ophthalmological Society, July 21st, 1887 :

During the examination the following precautions were observed—

1. Care was taken to exclude all but the proper class of subjects. 2. Subjects chosen whose eyes were free from extraneous disease or inflammation. 3. Young adults were used. 4. Males were taken. 5. Every subject was submitted to the same routine examination.

Observation. Subjective.—1. Direct vision for form, as a rule, normal. 2. Accommodative action: impossible to obtain any reliable result. 3. Visual fields: nothing could be gotten. 4. Color perception probably normal. *Objective.*—5. Pupils generally relatively equal in size, but frequently opposed to each other in their long diameters. 6. Irides equally, though sometimes sluggishly mobile to light stimulus, convergence and accommodation. 7. Extraocular motion intact in all directions; slight insufficiency of the interni found in one-half the cases. 8. Optic disc seemingly healthy; more so than would be expected for age. 9. Physiological excavation frequent; usually small, shallow, oval in outline, and occupying a position slightly to the temporal side of the center of the disc. 10. Scleral ring as a rule visible all around disc, and slightly broader to the outer side. 11. Pigment massings beyond

scleral ring generally limited to narrow concentric splotchings and double loops, with undisturbed areas beyond and between. 12. Entire absence of the so-called absorbed *conus*. 13. Fiber-layer of the retina but very slightly increased in thickness. 14. Very few lymph reflexes and opacities of vascular sheaths. 15. Retinal vessels about normal in comparative size, and in a few instances carrying impoverished blood. 16. No change in the choroid, except a somewhat granular condition, more pronounced in macular region; this sometimes being accompanied by a slight absorption of epithelium (especially amongst the most intelligent). 17. Almost equal degrees of H., with slight amount of As. present in every case. 18. Absence of any congenital external or internal gross local malformation. 19. The less imbecile the subject, the more common were the ordinary conditions seen in the used eyes of the mentally healthy.

It must be remembered that these observations do not hold absolutely good as written in every individual case, each subject presenting different degrees of the main features expressed in seemingly due proportion to amount of intelligence and consequent use of eyes for continued near-work. They merely show what should be expected in an average case, and thus serve to express the type.

The author concludes as follows:

First. The present study tends to show that the adult eye of the imbecile is an organ which is capable of proper functional activity, and that the want of action is in the main due to what may be termed intellectual hebetude.

Second. By reason of mental incapacity which has supervened in such subjects before the eye has been brought into continued and constant action as an instrument of accurate and delicate use, the ordinary appearances seen in the used eyes of the mentally healthy are lessened in due proportion to the amount of work given to the organ.

Third. The want of these physical changes, presenting a picture almost identical to the one seen during infantile existence, may be considered as typical of an unused, healthy, adult, human eye.

Fourth. The healthy eye of the adult imbecile, therefore, serves to teach us that the various conditions known as insufficiency of the interni, dirty red-gray appearance of the optic disc, irregularity of physiological excavation, non-visibility of the superior and inferior portion of the

scleral ring, absorbing clonuses in all of their varieties, increase in density and thickness of the retinal fibers, opacities of vascular lymph sheaths, disturbed states of the choroid, and gross errors in astigmatism with changes in indices of refraction, which are so frequent in the used eye of the mentally healthy, must be considered as pathological changes expressive of low inflammatory action, with stretching and distortion from increased intraocular and extraocular pressure; these being representative not only of general want of tone so often seen amongst those of sedentary life, but of constant and frequent abuse of a delicate organ.

DIRECT ELECTRIZATION OF THE EYE MUSCLES.—In the *Centralblatt fuer praktische Augenheilkunde* of March, 1887, Prof. Eulenberg publishes a few remarks on episcleral "direct" electrization of the eye muscles. He says that since the anæsthetic action of cocaine has been discovered the application can be made without producing discomfort to the patient. He drops a two to five per cent. solution into the conjunctival sac, and repeats it after five minutes. He uses his eye muscle electrode, consisting of a fine covered point on a handle, in which the current is connected by pressing on a button. He uses a large electrode applied to the sternum or the palm of the hand. Sitting one to two min. 0.5—1 M. A. He has not been able with either current to produce contraction of the muscles so as to move the eye in the corresponding direction, and ascribes the failure to the disadvantageous position of the eye muscles being deeply imbedded and the points of nerve entrance out of reach.—*Extractd by Dr. H. Hermann.*

NEURO-SEMIOLOGY.

SYPHILIS AS A CAUSE OF PROGRESSIVE PARALYSIS OF THE INSANE.—In one hundred cases of progressive paralysis, Ziehen, of Jena (*Neurologisches Centralblatt*, May 1st, 1887), could trace a distinct history of syphilis in from thirty-three to forty-three per cent. of cases, while in other cases of insanity the proportion of cases where a history of syphilis could be obtained did not exceed thirteen per

cent. It is well known that frequently progressive paralysis is due to several causes in active operation at the same time (heredity, alcoholism, traumatism, venereal excesses, etc. Ziehen could only in five cases out of his one hundred exclude every likely cause besides syphilis.

In eight of the above cases, mercurial treatment (friction cure) was employed, with the alleged result that the ordinary remissions were much prolonged in six. Some of the cases were treated with iodide of potassium, and here only about the half were apparently influenced for good. In cases treated by non-specific agents, only twenty per cent. showed distinct remissions.—*Canada Medical and Surgical Journal*.

CLINICAL NEUROLOGY.

THE MEASUREMENT OF GALVANIC RESISTANCE OF THE HEAD, AND ITS SYMPTOMATIC VALUE.—In order to determine the amount of resistance offered to the galvanic current in passing through the head, Eulenberg has conducted a number of experiments which are of interest more on account of the careful and scientific way in which they were conducted than for the practical value already obtained. He employed a current of moderate strength and density, by using large electrodes filling out the occipital and frontal regions almost entirely (sagittal ascending current) until, during this application, the galvanometer ceased to show an increase of the current, and the decrease of the resistance ceased. The final reading of the galvanoscope was recorded as the minimum of resistance for that current. The internal resistance of the battery (previously accurately determined) was subtracted from this reading in the well-known way. He measured the resistance both by substituting successive resistances by means of the ordinary metal Rheostads and by Wheatstone's bridge arrangement. The instrument which he used in place of the latter was Kohlrausch's measuring bridge with telephone attachment, which indicates the equalization of the bridges by a cessation of the sounding of the telephone. This instrument allows one to determine resistances of 1-100th to 50,000 Ohm very readily.

Finding that the ordinary electrode or Rheophore

offered too much resistance in itself he employed the unpolarizable electrodes of Martins, consisting of amalgamated zinc plates, which is armed with two large felt plates, one steeped in a concentrated solution of sulphate of zinc next to the zinc, the other impregnated with a seven per cent. solution of salt. The current was passed in a sagittal direction, as passing it transversely the resistance of the hair and the sensitiveness of patients was objectionable. He accurately determined the resistance in sixty persons, and found that it varies in the healthy between 1,000 and 2,000 Ohm. In pathological cases, in severe functional neurosis and psychosis, anæmia (hemicrania, hystero-epilepsy, melancholia), the minima of resistance was constantly and considerably increased over 2,000 and even 3,000 Ohm. In cases of hyperæmia, on the contrary, the resistance was remarkably decreased, in one case 940—1,250.

In order to find some explanation of this difference he determined the resistance offered by a column of blood and a column of cerebro-spinal fluid, and found that a column of blood of 10 cc. m. offered a resistance of 4,540—4,550, while cerebro-spinal fluid offered only a resistance of 1,800—1,900 Ohm, and concludes that the difference is due to the increased resistance of the blood corpuscles. One per cent. salt solution offers 1,340 R.

From these experiments Eulenberg concludes that as yet little positive has been obtained, except that with an increase of cerebral-spinal fluid and a simultaneous decrease of blood we ought to expect a decrease of resistance, and *vice versa*, and urges a continuation of these measurements by those who have control of a large clinical material. —*Extracted by Dr. H. Hermann from Neurologisches Centralblatt.*

ON THE OCCURRENCE OF COMA IN SUDDEN SPONTANEOUS BRAIN LESIONS.—In adults (according to W. Browning) free from relevant complications, embolism involving directly only extra-ganglionic portions of the cerebrum, does not cause coma. Conversely, where the diagnosis of cerebral embolism is warranted, primary coma indicates implication of the basal ganglia or brain-stem. The absence of coma does *not* preclude the involvement of the said lower structures. From the fact that more limited embolic injury involving other portions of the brain is frequently attended by coma, it follows that the location

(or seat) of a cerebral lesion is one of the important factors in the causation of this symptom.

Wernicke's view, that the slighter disturbance of consciousness by hemorrhage into this region—as compared with hemorrhage into other portions of the brain—is owing to circulatory peculiarities, and hence to the absence of the factor of suddenness, is disproven. Of course, thrombosis also, under like conditions, would not cause coma.

Whether embolism of the Sylvian trunk will or will not cause coma, is a useless question. It depends on the structures supplied by that artery in any given case. It must not be considered that the above conclusions at all disprove the accepted view that the cerebral cortex is the seat of higher consciousness.—*Medical News*, February 18, 1888.

HÆMOPHILIA.—Dr. R. L. Payne, Jr., Lexington, N. C., contributes to The *North Carolina Medical Journal* an interesting record to the clinical history of this interesting subject of study, in the case of Jefferson T., age eighteen, complexion fair and ruddy, eyes brown, hair red, is stout, well-built and very muscular. He has been very healthy since babyhood, and has had no attention from a physician since this tender age, except on numerous occasions when his father, Dr. Payne, Sr., has been called in to arrest hemorrhage, which always occurred from slight injuries, and never was troublesome immediately after the injury, but came on in ten days or two weeks thereafter. On one occasion he came near bleeding to death from the stumping of his toe. This gave very little trouble immediately, but ten days subsequently blood began to ooze out from around the nail, and he was well nigh exsanguinated before, with styptics and compresses, the bleeding could be restrained. At another time, while playing with a chicken-rooster, he was accidentally struck on the head by the spur of his pet and a small punctured wound inflicted in the scalp, which a fortnight later bled profusely, and was restrained with much trouble by his physician.

He never had one of the permanent teeth extracted, but when the milk teeth were removed troublesome secondary hemorrhage occurred. All his life the slightest blow on the nose has produced troublesome epistaxis, and he frequently suffered idiopathic hemorrhage from

this organ. His family history is very good. His father, a blacksmith, is one of the most muscular, lithe and active of men, and his mother is a robust woman who has known little sickness beyond those troubles incident to child-bearing, and some of the numerous slight ailments of the menopause. One point only in the family history of the mother is worthy of notice, and that is one of her brothers was a bleeder and suffered much like the patient whose history we are now detailing. Of the father and mother—in fact, of the rest of her family—she can give no history, all of them having died while she was quite young.

The patient came under Dr. Payne's care for hemorrhage February 3d, 1879. A vicious horse became frightened and ran away with the wagon, from which the boy was thrown, and his feet becoming entangled in the wagon-bed, he was dragged a considerable distance over stony ground. At this time his head was swollen to nearly twice its normal size from effusions of blood and serum, but this swelling rapidly subsided under the application of ammonium chloride and evaporating lotions. He was subsequently kicked by a gun and bled freely from the nose for about five hours, and was very much weakened when the doctor saw him and plugged the anterior and posterior nares. These and ergot controlled the hemorrhage.

February 5th, there having been no return of the bleeding, the plugs were removed from the nose and absolute quiet directed and the exhibition of the ergot continued. Both these injunctions were disregarded, and on the sixth day the patient hunted rabbits in the snow on foot for several hours.

February 7th. The patient bled from the nose since midnight. The anterior and posterior nares were again plugged, ergot ordered and cold applied to the head. Rest and a milk diet enjoined. At ten o'clock, the hemorrhage continuing unabated, plugs of cotton wool, as large as could be pulled into the posterior nares by a stout thread, were introduced and the nostrils were forcibly packed with the same material. These soon became saturated, when others were introduced saturated with Monsel's solution. 8 P. M. The cotton plugs were removed, and large plugs of sponge saturated with the iron styptic were introduced. Ergot and gallic acid and ergotine were administered, and subsequently a dose of morphine.

February 8th. Hemorrhage continues, very feeble pulse, pallid countenance, cold surface and frequent vomiting. Ergot hypodermically every fourth hour, 15 grs. gallic acid every second hour, and tincture cannabis indica gtt. 20 every sixth hour. Bladders of pounded ice to head and nose.

February 9th, 10 A. M. Bleeding ceased.

February 10th. No return of hemorrhage.

February 12th. Plugs removed to-day without bad sequence; a purgative administered; absolute rest was enjoined, and the tincture of iron recommended. From this time on to October, 1883, patient enjoyed good health with the exception of frequent bleedings from the nose, controlled, however, without a physician. He was very irregular in his habits, endured much exposure, and upon occasion used alcohol in excess. About October 5th he was thrown from a horse, striking the pit of his stomach across a rail fence. For a time the breath appeared knocked out of him, and when he regained consciousness he spat up or vomited a little blood. For two or three days thereafter he was very sore in his stomach, but it soon so far subsided as to allow him to plow and do general farm work.

October 19th he arose early and complained of feeling very cold and bad, but going about his work. He passed a considerable amount of blood. In the course of an hour this appearance of hemorrhage recurred. Not finding either of them in, he started for home, fainted in the street, and a brother physician applied restoratives and got him home. Late in the evening of the same day Dr. Payne's father visited him, and found him suffering frequently recurring hemorrhage from the bowels. At bedtime the thirst was very great. At 2 A. M. bleeding from the bowels was still going on at intervals, and in addition frequent and profuse hæmatemesis. Surface of the body cold, the pulse hurried and thready, thirst extreme, sighing respiration and a feeling of impending death. After one grain sulphate he slept quietly and undisturbed for some hours, but on awaking the symptoms again recurred and bleeding continued from stomach and bowels till the morning of October 21st, when, about forty hours after the onset of the hemorrhage, he became unconscious and died.

This patient had three brothers and one sister. The sister, aged thirteen, and the younger brother are both strong and healthy, with florid complexions, and neither

have as yet exhibited any tendency to undue bleeding, but the two older brothers, aged fifteen and seventeen years, respectively, are pale and anæmic, with flabby muscles, and both show unmistakable evidence of the hemorrhagic diathesis. The elder of these has epileptic convulsions dating from puberty and recurring about once or twice a month. There is, however, a history of two injuries to the head, each followed by slight concussion. This boy on several occasions has bled badly. Once he cut his finger and had no trouble himself to restrain the hemorrhage, but some days later his physicians controlled the bleeding with difficulty. On several occasions they extracted teeth for him. The operation gave no immediate trouble, but the invariable result was troublesome bleeding a week or ten days thereafter, requiring the plugging of the root cavity. The other brother is a weak, nervous boy, easily excited, and showing decided neurasthenic tendencies. He has troublesome secondary hemorrhages from the slightest wounds, and always requires styptics and plugging of the cavity after the extraction of a tooth.

The writer calls attention to the tendency of these cases to secondary hemorrhage. It is a phase of the diathesis which he believes no medical observer has yet noticed, but Felt, in his "History of Ipswich," describes a family of bleeders (males), who only suffered from troublesome hemorrhage a number of days after the reception of an injury.

Dr. Payne records the following reflections:

"Certainly no one would suspect any lack of fibrin existed in the blood of my patients from the readiness with which a clot formed directly after the receipt of an injury, but the trouble, always occurring a week or more thereafter, has sometimes led me to think some subtle change was brought about in the blood by the state of inflammation.

"Again, the idea has occurred to me that in these subjects there exists some inherent want of nerve power, which lessens the coagulating power of the blood, or what to my mind seems not at all improbable in these patients, there exists so great a degree of nervous impressibility that even the shock of a slight injury is sufficient to affect, through the nervous system, the coagulating power of the blood. In some this exalted sensibility of the nerves is so great as to do its work of change very rapidly, and in these the diathesis manifests itself by immediate hemorrhage, prolonged

and difficult of management, but in others the change indicated by the injury takes place more slowly, and the disordered innervation also interferes with the organization of the clot which has already formed in the injured vessel, and so the bleeding, which was at first easily controlled, again breaks forth, and is with as much difficulty restrained.

"This theory of the pathology of hæmophilia finds much support in the fact that in cases of death from lightning and after sudden death from other causes in which the nerve-power is suddenly lost, as Gross has shown, as well as after the section of the pneumogastric nerves, the blood loses all power to coagulate. Certainly, then, the nerves must exercise some influence on the coagulating power of the blood, and this theory seems more reasonable, therefore, than that which declares a deficiency of fibrin exists in the circulating fluid, because such a state of affairs would be easy of demonstration by chemical analysis did it exist, but as yet there is only one case on record in which, after careful analysis, a deficiency of fibrin has been declared to exist, and there is no reason why in this isolated instance the lack of fibrin may not have been due to other causes.

QUENU ON VARICES OF NERVES AS A CAUSE OF THE PAIN IN VARICOSE SUBJECTS.—Sixty-seven patients formed the basis of the author's researches. Some of them consulted the physician not for varices, but for sciatic pains relieved by the horizontal posture. Among the sixty-seven cases there were eleven of sciatic neuralgia. Among fifty-six old cases the leg and popliteal space were tender on pressure in twenty, the thigh in five, and the buttock in three cases. The pains commence in the leg and mount up little by little into the thigh and buttock.

Varicose subjects complain also of weakness of the members, which can also be explained by varices of the nerves. The pains due to varices are relieved by elastic pressure, but it is necessary to carry the compression clear up the groin.—*La France Méd.*, Feb. 11, 1888.

KAVA-KAVA AS A HYPNOTIC.—Dr. Gillany, Vienna (*Wiener Med. Woch.*), states that an alcohol extract of kava-kava has proven of value as an hypnotic. Dr. Kiernan (*Chicago Medical Review*, 1881) suggested that in the insomnia resulting from conditions of exhaustion this drug would give results of value.—*Medical Standard*.

NEUROPHYSIOLOGY.

ON THE NECESSITY FOR A MODIFICATION OF CERTAIN PHYSIOLOGICAL DOCTRINES REGARDING THE INTER-RELATIONS OF NERVE AND MUSCLE.—*By Thomas W. Poole, M. D.*—For some years past I have endeavored to bring to the notice of the profession a view of the inter-relations of nerve and muscle—more especially of the vaso-motor nerves and the arterial muscles—which is entirely at variance with what is taught in our physiological text-books.

I should be unable to find any excuse or apology for attempting so bold a task, were it not that the proofs which I have to advance are drawn entirely from the authentic storehouse of physiological research. While the facts to be here advanced are the results of observation by the great Masters in this department of science, I hope to be able to show, conclusively, that the inferences or interpretations placed upon these facts are in some instances erroneous and ought to be modified or reversed.

In the examples now to be cited of an erroneous interpretation of authentic experiments, the idea evidently dominating the physiological mind was that a stimulus from nervous energy is necessary to induce muscular contraction. As a corollary to this idea, of course, it followed that when the motor nerve supplying a muscle was cut, or paralyzed from any cause, the muscle thus deprived of nerve influence was rendered incapable of displaying its contractile power.

That such an idea was apparently justified by the behavior of the *voluntary* muscles is undoubtedly true; but not so in regard to the non-striated or involuntary muscles of organic life, which have been pronounced by physiologists to be paralyzed and powerless, at the very moment that the observers saw and recorded the palpable evidences of their more or less active contraction. In fact, so far from the current teaching of physiology being true, as regards the relations of motor nerves to involuntary muscles, the very reverse is true; the actual fact being that *muscles of the involuntary class, as a rule, contract, not when stimulated by their proper motor nerves, but when these nerves are cut, or are paralyzed, or dead.*

The Œsophageal and Gastric Muscles.—To come now to the facts. The statement continues to be repeated in each succeeding text-book on physiology, that section of

the pneumogastric nerves (vagi) is followed by paralysis of the œsophagus and stomach. Now, on the theory uppermost in the minds of physiologists—referred to above—the œsophagus *ought* to be paralyzed here, and to be reduced to the condition of a mere flaccid tube. But that such is not the case is evident from the fact that after the operation, food and drink fed to the animal, “in a few moments are suddenly ejected by a peculiar kind of regurgitation.” (Dr. Dalton’s Phys., p. 473.) It needs no argument to prove that the sudden ejection of ingesta, in the manner stated, so far from being an evidence of paralysis, is really a proof of active contraction in the muscle.

But it is said that sometimes the ingesta are detained in the œsophagus for a time, and, “owing to paralysis of this canal,” are not conveyed into the stomach. (Ib.) Dr. W. B. Carpenter, F. R. S., refers to this by stating that “if the pneumogastric be divided in the rabbit, on each side, above the œsophageal plexus but below the pharyngeal branches, and the animal be then fed, the food is delayed in the œsophagus which becomes greatly distended. (Hum. Phys., 5th Amer. Ed., p. 404.) Now the pharyngeal branches supply the upper part, and the œsophageal plexus, the lower extremity of this muscular tube. Mark what follows on section of the vagi between these two! The upper part of the œsophagus, whose nerves are intact, admits the food and drink apparently in a normal manner, while the lower part of the tube, which has been deprived of nervous influence, contracts upon itself, and so lessens the caliber of the “canal” as to arrest the further passage of the superimposed ingesta, as a consequence of which the œsophagus “becomes greatly distended.”

Whether the ingesta are thus forcibly detained or “forcibly ejected” would appear to depend on the point at which the vagi are cut. But in either case, the results, so far from being a proof of paralysis, really bears evidence of activity of the muscle. And this is confirmed by the observation of Dr. M. Hall, that “the simple contractility of the muscular fiber [of the œsophagus] occasions a distinct peristaltic movement along the tube *after its nerves have been divided*, causing it to discharge its contents when cut across.” [Italics mine.] (Dr. Carpenter’s Hum. Phys., 5th Amer. Ed., p. 405.)

Dr. Burdon Sanderson expresses the idea uppermost in the physiological mind, in stating that after section of

the vagi "the muscular fibers of the œsophagus are paralyzed, so that regurgitation of food from the stomach is apt to take place." (Hand-book for Phys. Lab., Amer. Ed., p. 318.)

Dr. W. B. Carpenter seems to pass over this part of the subject lightly, and it is not till treating of the effects of section of the vagi on the gastric secretions that he plainly states that, "the first obvious effects of this operation are vomiting (in animals that are capable of it) and loathing of food." (P. 423.) He also tells us, in another place, that the reopening of the cardiac orifice, on pressure from within, is one of the first of that series of reverse actions which constitute vomiting. (P. 404.) It is evident that the "pressure" referred to and the force necessarily required to eject the contents of the stomach and œsophagus could not come from "paralyzed" muscles, which the facts show to be really undergoing active contraction.

That nerve force is actually in abeyance in the act of vomiting was fully recognized by Dr. Anstie, who places it among the effects of paralysis of the medulla oblongata in narcosis. (Stimulants and Narcotics, p. 168.) While the vomiting of migraine, he says, "marks the lowest point of nervous depression." (Neuralgia. p. 39.)

Had those eminent physiologists, Drs. Dodd and Bowman, doubts of the truth of the physiological theory of the day, and a prescience of what the future had in store, when they wrote: "The office of the gastric branches of the vagi nerves appears, from Dr. Reid's experiments, to be chiefly to *control* the movements of the muscular coat of the stomach." [Italics mine.] (Phys. Anat., p. 493.) That is precisely what the scope of this paper is designed to show—that in so far as the involuntary muscles, at least, are concerned, the function of nerve force is not to stimulate, but to restrain and control muscular activity; which all physiologists regard as an inherent endowment of muscular tissue.

The Bronchial Muscles.—Dr. Burdon Sanderson informs the readers of the "Hand-Book," that after section of the vagi "the muscular fibers of the bronchial tubes are in a similar condition" to those of the œsophagus and stomach. (P. 318.) Then it is evident that these muscular bands come under the rule or law laid down above, and contract, like other muscles of this class, when deprived of nervous influence.

The Nasal Muscles.—It is a curious fact that “owing to the great size of the velum pendulum palati, the horse is unable to breathe through the mouth.” (Strange-way’s Veterinary Anat., p. 209.) As a consequence, respiration is carried on in this animal exclusively through his nose; and when both the facial nerves are cut, or paralyzed, “the nostrils immediately collapse, and the animal dies by suffocation.” (Bernard, quoted by Dr. Dalton Phys., p. 458.)

A result very similar, so far as the closure of the nostrils is concerned, has occurred in the human subject, during paralysis of the facial nerve. Thus, Sir. Thomas Watson, reporting the case of the girl, Jane Smith, says: “When she tried to snuff in air through her nose, not being able to keep the right nostril stiff and open, its sides came together, and no air passed up that side.” (Lectures, Prac. Physic, p. 366.)

A little reflection will show that this is necessarily due to muscular contraction. The effect produced is not to be accounted for by any filling up or stuffing of the nasal passage by relaxed or paralyzed muscles, because the muscles are on the exterior of the cartilages, and mucus membrane or fibrous tissue does not contract or respond to nerve action. The obstruction is caused by the cartilages of the nose coming together, for which the only adequate explanation is the action of the constricting muscles, which, as in other similar cases, assert their power when nervous restraint is removed.

Spasm of the glottis due to nerve paralysis.—We now come to a still more striking illustration of the truth of the proposition laid down above. The aperture of the glottis is closed by one set of muscles and opened or dilated by another. The constricting muscles are the arytenoidei and crico-arytenoidei laterales, while the dilators of the glottis are the crico-arytenoidei postici.

Dr. Burdon Sanderson states that “the widening of the glottis is a condition of general muscular relaxation.” He further states that the closing of the glottis is equally due to a general contraction of all the muscles; so that the glottis is closed, “not because the postici crico-arytenoidei muscles and the other dilating muscles* do not act with the rest, but because they are overpowered by the constricting muscles. (Hand-book, p. 308.)

The situation thus depicted becomes quite remarkable

*There are no “other dilating muscles” than the crico-arytenoidei postici.

and full of interest, when it is remembered that the sole motor nervous supply to both these sets of muscles passes through the inferior laryngeal (or recurrent) nerves, a branch of the pneumogastric, and that when this nerve is cut or paralyzed, the closure of the glottis takes place as a result of spasm of both of the antagonizing muscles, as just stated.

On page 318 of the Hand-book, the same eminent physiologist, describing the effects of section of the vagi, says: "The glottis is partially closed, just as it is in death." How the glottis is closed in death will appear from the fact, vouched for by Dr. Austin Flint, in the 5th edition of his "Practice of Medicine," when he says, the operation of passing a probang within the larynx, "is extremely difficult, if it be practicable on the cadaver." (p. 294.)

There can be no doubt about the effect of the section referred to being of a paralyzing character, so far as the nerve is concerned, seeing that the simple section of the nerve during life, and the extinction of all nerve force in death, lead to precisely the same results as regards the closure of the glottal aperture. Dr. Burdon Sanderson adds that "in animals with divided vagi, life may be prolonged by tracheotomy," showing how complete and fatal is the spasm thus produced. Other evidence of similar import is not lacking. Thus, Dr. Austin Flint, discussing the "danger of death from suffocation" in the "obstructed inspiration" occurring in nervous aphonia, says: "The condition is analogous to that after the physiological experiment of dividing both recurrent laryngeal nerves." (*Prac. of Med.*, 5th Ed., p. 309.) The same author has "reported a case in which the left recurrent nerve being situated between a calcareous deposit and an aneurismal tumor, spasm of the glottis occurred so frequently and to such an extent as to prove fatal." (*Ib.*, p. 371.)

Now since the recurrent nerve is the only motor nerve supplying these muscles, and since section or pressure on a nerve trunk cannot increase nerve activity—the nerve trunks being mere carriers and not producers of nerve force—it is evident that no other conclusion is possible than that the spasm here referred to is due to the absence of nerve force, and not to a stimulus from excited nerve action. And since nerve paralysis is thus shown to be directly the cause of spasm of the glottis, is it not necessary to infer that whatever is done by reflex action to cause spasm of the glottis must be of a paralyzing character to the

nerve also? Thus, what is vaguely called "irritation," by which is usually meant an excitation or exaltation of nerve power, and which consists really in a perturbation of nerve force, must necessarily be an influence of a paralyzing character to the nerves it traverses. Such reflex "irritations" are usually attributed to brain lesions, to indigestible food, and other causes of a more or less debilitating character which may well arrest, rather than develop the flow of nervous activity.

If it be true, that pain is "an expression of impeded and imperfect nerve energy, not of heightened nerve function," for which there is high authority (Anstie, "Neuralgia," pp. 12 and 163), how much more is the perturbation of the nerve molecules, which constitutes "irritation," a disturbance of normal activities which is equivalent to paralysis.

Relation of vasomotor nerves to the arterial muscles.—I propose to show here, on the very best physiological authority, that what is known as "paralytic hyperæmia" is—contrary to the accepted opinion—venous and not arterial.

I need not delay to offer proof that the middle muscular coat of the arteries is under the control of the vasomotor nerves of the sympathetic, which regulates the caliber of these tubes; or that the chief vasomotor center is in the medulla oblongata, with probably lesser centers in the spinal cord. These are among the well-authenticated facts of recent physiology. It is in determining the action or play of this mechanism, that I have the temerity to claim that our physiologists have made an "unscientific use of the imagination."

The theory of the text-books is that when the influence of the vasomotor center is cut off from the arterial muscle in any way, hyperæmia of the arteries results. Thus in destruction of the nervous centers by the operation of "pithing" as a result of section of the spinal cord just below the medulla, and on section of the chief vasomotor nerve trunks, in the body or viscera, it is claimed that the corresponding arteries are more or less dilated. Dr. Burdon Sanderson contents himself with stating that under these circumstances, "the arteries are relaxed," and again, that they become "permanently larger." (Hand-book, pp. 245–256.) Other physiological teachers, such as Prof. Kuss, say that here the arteries are "dilated," while Dr. Sidney Ringer, in his excellent "Therapeutics," has it that "the

arteries remain widely dilated." (5th Amer. Ed., p. 312.) We shall presently see how far these statements are justified by the facts.

Section of the cervical sympathetic.—To M. Claude Bernard and Dr. Brown-Sequard we are largely indebted for what is known on this subject, as observed by them in the famous experiment on the cervical sympathetic. Dr. Brown-Sequard enters into the details at great length in his "Physiology and Pathology of the Central Nervous System." Yet nowhere in this work, in regard to this or any other section of cord or nerve, does he once assert that the arteries are dilated. In the pages devoted to it he refers to the contemporary experiments on this subject by Waller, Donders and his pupils, by Kussmaul and Tenner, Moritz and Schiff, yet he makes no mention of an allusion to dilated arteries by any of these eminent observers. This is surely significant. With him it was always "the blood-vessels" which are "paralyzed" and "the blood-vessels" which are "dilated." He says that "the hanging down of an animal, by holding it down by its hind legs, in producing a congestion of the brain, produces very nearly all the effects of this section." (P. 143.)

From these considerations it will be evident, first, that it was by no means apparent—was indeed a matter of great difficulty to determine accurately what particular "vessels" were enlarged, hidden as they mostly were beneath the skin and its subjacent tissues. Nay, it is not too much to say, that the statement that it is the arteries that are enlarged is purely hypothetical, and not based upon an actual demonstration of the facts. Secondly, it will be also evident from the statement just quoted from Dr. Brown-Sequard, that venous hyperæmia, the result of the blood being forced out of the arteries by their partial contraction, "very nearly accounts for all the effects of this section." The truth of this will not only appear from what is to follow now, but from the effect of other sections to be noted.

Notwithstanding an increased afflux of blood, and consequently a relative elevation of temperature, with heightened sensibility, "the intimate acts of nutrition appear to be modified in nothing. * * * Nor does it appear that this hyperæmia, however intense or prolonged it may be, has ever the effect, save under exceptional circumstances, of determining by itself the development of

inflammatory action." (M. Charcot, Lect. Nerve Sys., pp. 90-91.) This could hardly be the case if the hyperæmia were arterial.

Among the effects of this section on muscles, as recorded by Dr. Brown-Sequard, are contraction of the pupil, retraction of the eye-ball, partial closing of the eyelids, contraction of "almost all the muscles of the eye," and also of the muscles of the angle of the mouth and nose; contraction of the erectile muscles of the ear, and others. Now, seeing that it is *contraction*, and not relaxation of all these muscles, which follows section of this nerve, the law of analogy would require that the muscles of the arteries supplied by this nerve be contracted also; otherwise the anomaly would exist of the same nerve producing contraction in a large number of muscles and relaxation in a single instance. Why should the arterial muscle be regarded as an exception among so many others, especially when all the facts of the case are compatible with arterial contraction and venous fullness?

As for the second part of the experiment, in which the hyperæmia is dissipated by faradization of the distal end of the cut nerve, that is easily accounted for. The terminal branches of the cut sympathetic evidently influence the muscles of the head and face over a wide area. As is well known, the effect of faradization is to set up a succession of rapid contractions and relaxations in muscular tissue. The pressure thus brought to bear on the swollen veins would amply suffice to force their contents onwards, and thus to dissipate the venous congestion. Examples of this very result are not lacking. Thus when Kolliker applied one pole to the umbilical artery and vein of a fresh human placenta, there followed contractions by which the veins forced out their contents and changed into bloodless strings." (Meyer's Elec. Hammond, p. 88.)

The following quotations from Rosenthal's "Diseases of the Nervous System," Vol. II., Wood's Library, have a peculiar fitness here: "Kussmaul and Tenner have shown in a series of experiments, by placing a watch-glass in the opening of a trephined skull, without allowing the air to enter (Donder's plan), that compression of the carotids causes capillary anæmia and venous hyperæmia of the brain and meninges." (P. 64.)

"In Verneuil's patient, upon whom ligature of the carotid was performed for a tumor of the parotid gland, persistent contraction of the pupil developed shortly after-

wards, with rise of temperature and vascular dilatation upon the temple and gums, and abundant perspiration upon the side of the face, corresponding to the operation. All these symptoms can be produced experimentally upon animals by dividing the cervical sympathetic. (P. 26.)

Here is a remarkable proof that the section referred to causes arterial contraction (and not dilatation,) seeing that the other effects of the section are equivalent to those produced by ligature of the carotid.

Section of the Splanchnics.—In a “demonstration of the vasomotor functions of the splanchnics nerves,” the chief editor of the “Hand-book for the Physiological Laboratory” (Amer. Ed., p. 258), informs his readers that these nerves contain vasomotor fibers which “are distributed to the arteries of the abdominal viscera.”

We approach this “demonstration” expecting to find that when these nerves are cut the predicted results will follow in the arteries they supply being more or less “relaxed” or “dilated.” What is our disappointment to find in all that follows in this chapter of the “Hand-book,” the arteries are never once alluded to! Thus the very pith and point of the so-called “demonstration” is entirely ignored! What occurs is thus stated by Dr. Burdon Sanderson: “After section of both nerves the vessels of all the abdominal viscera are seen to be dilated.” What “vessels” are these? Not the arteries, because Dr. B. S. continues: “*The portal system is filled with blood; the small vessels of the mesentery and those which ramify on the surface of the intestine are beautifully injected; the vessels of the kidney are dilated, and the parenchyma is hyperæmic; all of which facts indicate, not merely that by the relaxation of the abdominal blood-vessels, a large proportion of the resistance to the heart is annulled, but that a quantity of blood is, so to speak, transferred into the portal system, and thereby as completely discharged from the systemic circulation as if a great internal hemorrhage had taken place.*” (P. 260.) [Italics mine.]

It needs no italics to give point and force to this remarkable admission. It is merely stating, with a little circumlocution, that the arteries are empty and the veins are full! The “beautiful injected vessels,” which the learned editor so much admired, are not arteries but veins, the blood in which has become “bright red, like arterial blood,” as Prof. Kuss explains of venous blood

in the mesentery, "because oxygenation has been effected simply by exposure to the air." (Lec. Phys., p. 326.)

The contraction and emptiness of the arteries, after section of their vasomotor nerves, is thus proved on the very highest authority. Where now is the justification of the assertion that after a section of this kind the arteries are dilated and hyperæmic?

Whatever obscurity there might be as to the actual results of section of the cervical sympathetic, for obvious reasons, there can be no mistake as to the results here.

Now the law of uniformity of cause and effect, demands that what is true of the relative state of the arteries and veins after section of the splanchnics, must be true also after section of the cervical sympathetic; and since the arteries are thus shown to be empty and the veins full in the former case, the same condition must be held to prevail also in the latter.

It is worthy of note, in this connection, that both after section of the spinal cord, and after section of the splanchnics, blood pressure falls, and in both cases may be restored by faradization of the divided cord or nerve. It is evident from this, that the fall of blood pressure (as shown by the kymograph in the carotid) on section of the cord, is not to be regarded as an indication of arterial relaxation, as appears to have been done; because blood pressure fell also after section of the splanchnics, where we know positively that arterial dilatation could not have taken place.

It may be asked, how could faradization of the spinal cord or of the nerve, restore the pressure or tension in the arteries, if the heart and arterial system were already empty? Dr. Burdon Sanderson supplies the answer, indirectly, in stating: "It is seen that after section of the cord the heart is flaccid and empty, and that its cavities fill and its action becomes vigorous, when the vascular contraction caused by excitation of the peripheral end [of the cut cord] forces the blood forward so as to fill the right auricle." (P. 251.) Now the only blood which could be "forced forward so as to fill the right auricle," is *venous* blood from the distended portal system. Thus it will be seen that all the facts fit, and as it were, dovetail into each other, in establishing that nervous paralysis and contraction of the arterial muscle go together, the result being hyperæmia, not of the arteries, but of the veins.

The explanation just quoted from the Hand-book, as to the forcing forward of the venous blood, as an effect of the faradic current, confirms the explanation made above, as to the dissipation of the venous hyperæmia by the same current after section of the cervical sympathetic.

State of the Arteries in Death.—Not only are the arteries invariably as empty as their physical structure will permit them to be, when their nerves are cut or paralyzed in the living body, but such is also their condition *in death* of the body, when nerve force is extinct. This is a fact too well known to need any special proof. It is a fact, however, which ought to be explained by those who hold that in a condition of nerve paralysis the arteries are “dilated” and hyperæmic.

The Operation of Pithing.—What has just been said of the contracted and empty state of the arteries is true also after the operation of “pithing” (in which the medulla and spinal cord are destroyed), as anyone can easily satisfy himself, as I have done, by actual experiment. This is inadvertently proved to be the case by Dr. Burdon Sanderson in his account of an experiment designed to prove the contrary. Two frogs are taken. One is “pithed,” in the other the nervous centers are uninjured. In both the heart is carefully exposed and the single ventricle slit open, so as to show the state of the great vessels. The experiment is intended to prove that in the pithed frog the arteries are “relaxed” and full of blood. On Dr. Burdon Sanderson’s showing, the results are these: In the pithed frog, “although the heart is beating with perfect regularity and unaltered frequency, it is empty, and in consequence, instead of projecting from the opening in the anterior wall of the chest, it is withdrawn upwards and backwards towards the œsophagus.” The heart and its appendages “are alike deprived of blood;” but on opening “the rest of the visceral cavity,” “*the intestinal veins are distended.*” In these, “the whole mass of blood has come to rest, *out of reach of the influence of the heart.*” (P. 246.) How significant is this! If the arteries were dilated, and consequently full of blood, this blood could not be said to be “out of reach of the influence of the heart.” But this is not all. The Hand-book continues: “In the frog deprived of its central nervous system *only a few drops of blood escape*—the quantity, that is to say, previously contained in the heart and in the beginning of the arterial system. In the

other, *bleeding is not only more abundant but continues for several minutes after the section.*" (Pp. 246-296.) [Italics mine.]

Is it not evident that in the case of the pithed frog, the arterial system promptly emptied itself into the now "distended veins," and had "only a few drops of blood" left to drain away through the open ventricle (the frogs being both suspended); while in case of the other frog, whose nervous system was intact, this arterial contraction did not take place, and the arteries continued to bleed for several minutes till drained of blood.

The "Hand-book for the Physiological Laboratory," from which I have quoted so often, occupies to-day a leading place as an exponent of physiological science. The reader who studies the details of the experiment just quoted will be surprised to find, that here again, in an experiment specially designed to prove that "all the arteries are relaxed," the condition of the arteries is completely ignored, and never once alluded to! The arteries *ought* to be "relaxed," "dilated," and even "widely dilated" here, on the theory of the text-books, but they are empty and contracted, their final act being, as in death from other causes, "to drive their contents into the veins." (Kuss. Phys., p. 181.)

An Experiment of Dr. Brown-Sequard.—In this connection I most notice in the briefest manner, an experiment of Dr. Brown-Sequard, in which the doctrine here supported is confirmed in a remarkable manner.

In a dog, a section was made of a lateral half of the spinal cord just below the medulla. The result was, extreme hyperæmia of the "blood-vessels," to use Brown-Sequard's term, of one posterior limb, while the "blood-vessels" of the other posterior limb displayed a state of spasm and ischæmia quite as extreme. "Very often the spasm persists for days," wrote the observer, "and it may be so great that the circulation is almost entirely suspended," so that "the cutting of the skin hardly gives a drop of blood."

The question at once arose, was the paucity of blood in one limb due to the excess of blood circulating in the other, or *vice versa*? Was the spasm on one side, or the dilatation on the other, the primary or direct effect, through the spinal vasomotor nerves of the half section of the cord?

In order to solve this question, Dr. Brown-Sequard made "direct experiments." Among others he ligatured the iliac artery feeding the dilated blood-vessels of the

hyperæmic limb, thus directing "almost the whole of the blood coming from the aorta" into the iliac artery of the limb in which the circulation was so much diminished. Notwithstanding this, the spasm was but partially overcome: "the temperature rose but little;" and "it was quite evident the small arteries near the toes did not allow the blood to pass freely."

Here was complete evidence, not only that there was spasm, but also that this spasm was arterial. Although the vasomotor mechanism of the spinal cord is as yet only very imperfectly understood, there seems no reason to doubt that this active contraction of the arterial muscle was here, as elsewhere, due to nervous paralysis, the result of the half section of the spinal cord.

More about the arterial muscles.—It will be obvious that the relative state of the arteries and veins in the foregoing experiments is incompatible with what M. Charcot calls "the paralytic dilatation" of the arteries, as a result of vasomotor nerve section, and could not occur, if after this section the arteries remained "widely dilated," and "permanently larger," as asserted by other authorities already quoted. If this were the condition of the arteries, it is evident that they would be wholly incapable of contracting upon their contained blood, so as to force it forwards through the capillaries and into the veins; an act depending entirely upon arterial contraction, because the force of the heart has already expended itself, and the capillaries have no muscular walls; while, that the veins are merely passive, is shown by the fact they have no vasomotor nerves, and their caliber is not, as in the case of the arteries, regulated by nerve influence. (Dr. M. Foster's Phys., pp. 265-267.) Thus all the facts show that the arteries, so far from being "dilated" and "paralyzed" are undergoing active contraction.

Some recent authorities appear to suggest the modified idea that the dilation of the arteries, instead of being "permanent," as alleged by some authorities, is a temporary effect—"an opening of the flood-gates," so to speak, in order to facilitate the transmission of blood to the veins. Thus Dr. M. Foster writes: "The section of the splanchnic nerves causes the mesenteric and other abdominal arteries to dilate, and these being very numerous, a large amount of the peripheral resistance is taken away and the blood pressure falls accordingly; a large increase of flow into the portal veins takes place and the supply of blood

to the face, arms and legs, is proportionately diminished." (Phys., 3rd Amer. Ed., pp. 240 and 220.)

It would appear that here, as elsewhere, "the fall of blood pressure" is regarded as evidence of "lessened peripheral resistance," and a proof that the arteries are "dilated," the fallacy of which will presently appear.

We read again: "When the nervous system is destroyed, dilation of the splanchnic vascular area causes all the blood to remain stagnant in the portal vessels; and probably these as well as other veins are rendered unusually lax, so that the blood is largely retained in the venous system, and very little reaches the heart." (Ib., p. 367.) And further: "When in the frog, the brain and spinal system are destroyed, very little blood comes back to the heart, as compared with the normal supply, and the heart in consequence appears almost bloodless and beats feebly * * the veins become abnormally distended and a large quantity of blood becomes lodged and hidden as it were in them." (Ib., p. 263.)

Here is the secret, both of the emptying of the arteries and of the fall of blood pressure. The blood comes to rest in the more capacious venous system (Ib., p. 154.), "out of reach of the influence of the heart." Now, seeing that the rapidity of the arterial circulation is such that only one-seventh of a second is required for blood to pass from the heart to the radial pulse, how long, think you, would be required to empty the arterial system of the pithed frog, seeing that at first little blood, and very soon no blood, finds its way back through the heart, into the arterial trunks? Why, the time required would be counted by seconds rather than by minutes. There would be no time and no necessity for the terminal arteries to dilate; the emptying of the arteries and the fall of blood pressure being amply accounted for by the fact that *blood is passing out of the arterial system faster than it is being returned to it.*

A precisely similar condition to that just described as resulting from nerve destruction, occurs also in the fatal stage of asphyxia. Here, too, the arteries are "contracted" and empty, and the large veins are so distended, that "if cut into they spurt like arteries." (Dr. Burdon Sanderson, Hand-book, etc., p. 332.) And here also, Dr. M. Foster tells us there is a fall of blood pressure in the midst of general arterial contraction. He says: "On account of the increasing slowness and feebleness of the heart, the blood pressure, in spite of the continual arterial contraction,

begins to fall; since less and less blood is pumped into the arterial system." (Phys., p. 445.) It will be seen that the parallel between the two cases is complete, and that the plain facts, as given by the highest authorities, do away completely with the assumption that, here, the fall of blood pressure is to be regarded as a proof of arterial relaxation.

Even in the slower forms of death, when the process of emptying the arteries is more gradual, there is still no evidence of, and no necessity for, a dilation of the terminal arteries to give exit to the blood; for, granting that contraction of the terminal arteries would tend to hinder the outflow of blood, this effect would be counteracted by the stronger contraction of the larger arterial trunks above, forcing the blood through and out of the numberless terminal branches ending in the capillaries.

INFLUENCE OF THE NERVOUS SYSTEM ON ANIMAL HEAT.—Notwithstanding the great and generally recognized influence of muscular contraction on the production of body heat, according to a paper in a recent number of Virchow's *Archiv.*, by Dr. U. Mosso, a young Italian physician, the influence of the nervous system is still greater. In his experiments he observes that dogs that had run to exhaustion showed no increase of body heat whatever. That if the dog were calm and the labor not too great, the temperature was not heightened by muscular contractions; it was rather lowered. That during the rest that follows labor in dogs there is a noteworthy fall of temperature below the normal. The author also made observations on himself during an arduous walk of one hundred kilometres in two succeeding days. On this occasion a rise of temperature took place that reached a maximum of 38.8° on the second day, and was still maintained on the day following. He is of opinion, however, that his body temperature during the walk was not commensurate with the great muscular force expended. If frogs are poisoned with minute doses of strychnine, and every precaution is taken against exciting reflex tetanic movements, it is found that the temperature is considerably heightened without any contribution thereto on the part of the muscles, as they do not contract. Further experiments led him to believe that the increase of temperature of frogs when poisoned by strychnine was less due to any tetanic contraction of muscles than to the

great irritability of the nervous system. The temperature of frogs was raised by strychnine even when they were in a state of paralysis from curare, and it rose even in spite of the most complete motionlessness of the curarized frogs. The rectal temperature of a dog paralyzed by curare was raised to 3° by excitation of the nervous system by subcutaneous injection of strychnine. When we irritate a nerve two things occur: muscular contraction, and increased activity of the chemical processes upon which the rise of temperature depends. Curare is a substance, therefore, that paralyzes the motive power of nerves, but not their thermic action. There are other poisons, on the other hand, that have an exactly opposite effect. When, for example, chloral hydrate is given in large doses, it is no longer possible to raise the temperature by any of the agents that without it are capable of increasing the body heat. Muscular contraction is not abolished, but the temperature steadily falls.

The influence of pain on the body temperature is to raise it while the pain lasts. Experiments showed that by means of pain a rapid rise of temperature could be induced, reaching to about 1° Cent., care being taken to prevent cooling at the same time by uncovering the body. The influence of the emotions was still more remarkable. In dogs the rectal temperature varies more easily than in the human species. The sight of food or of another animal is sufficient to raise the temperature in the canine race. The author supposes this extreme variableness to be the cause of the different statements regarding the temperature of the dog. Startling occurrences, such as the firing off of a gun, raised the temperature a degree C. The same thing occurred with pigeons, and he noticed his own temperature was raised a degree by great and joyous excitation (*naen einer starken freudigen erregung*). The practical considerations arising from these experiments are not unimportant. If the body heat of a healthy individual can be disturbed by physical excitement, it is much more likely that the temperature of an invalid—for instance, a phthisical patient—will be influenced by the same causes. The experiments afford one more argument in favor of the door of the sick room, especially in severe cases, and after parturition and operation, being jealously guarded by the medical attendant. The subject is worthy of further investigation.—*Gaillard's Medical Journal*.

EDITORIAL.

[All unsigned Editorials are written by the Editor]

Mistaken Medical Advice in Regard to Travel for Persons Having Certain Forms of Mental and Nervous Disease.—One of the most egregious of professional blunders falling under daily cognizance of the alienist and neurologist, is of the character indicated in the caption.

A physician, whose range of clinical experience may have been limited to the ordinary run of a general practice, or who possesses at most but a small and superficial, and therefore dangerous kind of knowledge of the graver nervous diseases (if he practices upon it), especially of such as involve the mind in derangement, and not knowing what ought to be done, or might be done by others, jumps at that facile *dernier resort* of medical perplexity and rashly recommends travel. No error in the departments of psychiatry or neurology has been more fatal to the welfare of patients, or more damaging to the reputation of the practitioner than this.

A grave symptomatic change comes over a patient, incomprehensible to his family physician. He becomes more despondent about his business affairs than is natural to him, begins to speak apprehensively, when formerly he talked with hope and confidence of these and other personal concerns, or his spiritual welfare suddenly begins to especially trouble him. He talks, perhaps of the possibility of being damned; he hardly thinks life is worth living, though a few weeks before he thought a good deal of it, and no real cause, outside of himself, has brought about the change in his feelings. Maybe he expresses the suspicion that his friends do not esteem him as they used to; that they look down upon him. If due inquiry is made of himself or his family it is found that he does not sleep well, and that his bowels are sluggish, and indifference has supplanted his accustomed relish for food. His pulse may or may not be normal. In a sort of guarded way he goes to his family physician, and talks to him.

His physician examines him, prescribes for him according to what physical symptoms appear prominent, and according to the limit of his psychiatric knowledge, pooh-poohs! his ailment; tells him, perhaps, that his liver is out of fix, and he'll fix that; and in the next visit or two of the poor-spirited patient, failing to benefit him, recommends, or acquiesces in Hot Springs or Eureka or a trip away somewhere else, perhaps to Europe. Tells him to bestir himself and shake off his gloom. If the patient has the misfortune to be a woman, he will probably propose a course of local gynecological treatment, a woman's brains, unlike those of man's, being mostly in her genitalia.

Failing in the gynecological course, as the experience of all asylums attest they do in a large majority of cases, unless it be constitutional and aimed through the ganglionic system at vasomotor pelvic paralyses and the consequent vascular congestions common to women of lessened nerve tone, or unless it be combined with a constitutional neurotic and hematic reconstructional plan and tranquilization and control of the nervous system—cerebro-spinal and ganglionic—as such cases require, combined with a change of surroundings, she too is recommended to travel to White Sulphur or some other springs, if she is not sent across the sea with a chance of committing suicide on the way.

There is far too much of this random and unskilled advice. It is comforting to have a patient where he will no longer advertize the incompetency of his physician, and abide in the community as an *opprobrium medicorum*. But patients rashly sent away in this manner without such medical treatment and attendance as they require, are apt to return like curses and chickens, or be brought back as corpses, to the discredit of scientific medicine.

Physicians should be cautious about this kind of advice. There are too many health resorts recommended for diseases that only medical skill can cure, and there is too much travel recommended in lieu of that skilled medical treatment which alone can cure certain patients; and to send away patients afflicted with grave nervous diseases and threatened insanity without proper medical attention, is a criminal oversight and neglectful of their true medical welfare, which it is the duty of the physician to study and guard.

This same arraignment might be made of many thoughtless medical men who consign the wrong patients to the masseur and the masseuse, a fashion just now overdone, for massage is only exercise, and the physician might, if he would, learn to apply it far more effectually than the ordinary muscle manipulator if he would take the trouble to use his own static machine in such cases, for electric massage is far better than manual kneading and rubbing.

The best way is to keep the patient in our hands, or place him in the care of some other physician competent to treat his malady and wisely direct the patient's recreations, and regulate his environments with a view to the best mental results. Massage and the spas, and the sea, and the mountains or valley are auxiliaries, not substitutes, for medical treatment in grave maladies of the nervous system. They may be prescribed, but we should know well the influence of the new climate and the environment before we commit our patients to them, be reasonably well assured that the patient who confides in our advice has a good prospect of benefit if he goes from our care, and a continuance of judicious treatment is often as essential with a change of environments in the psychoneuroses and the neuroses as is medical advice and treatment at home. To send them away to rely upon themselves is to stigmatize medicine as futile in the management of these diseases, and this is not the truth.

Cause and Care of a Case of Insanity—a Case Record, with Comments.—Though painters, like poets, are born, not made, yet sometimes an amateur artist may paint a picture so true to nature that a master hand might not materially improve upon the effort. Such is the following record of the wear and tear of a young and faithful brain and mind overborne by long, anxious and weary watching, resisting the physiological demands of nature to obey the call of moral duty, and superadded to this, the shock of a cerebral concussion.

DEAR DOCTOR:

I write you a short history of a case of insanity I am now treating, and ask for your valuable aid and advice.

A young lady, æt. twenty-seven, single; good physical and mental development; has never been sick; with no history of mental derangement in her family on either side; has lived with her maternal uncle, who is an exemplary divine, for ten years. His wife died last June.

For two years my patient nursed her aunt constantly, almost night

and day, at the same time doing most of the domestic work. She shed no tears at the death of her aunt. Her grief appeared too great for tears. Since the death of her aunt she has lived with her uncle as his daughter, doing the domestic work against his advice because, as she stated, the work diverted and occupied her mind.

About two weeks or ten days before the development of her insanity she visited a friend, who told her that she did not think it prudent for the two to live together alone; that people might say that she and her uncle were too intimate, *implying sexual intimacy*. With this new and shocking revelation she started for home. While standing in the vehicle in which she was to be driven to the railroad station the team suddenly started, and she fell backwards. The back of her head struck the icy ground with considerable force, producing momentary mental confusion. Her abundant hair, coiled on the back of her head, probably saving her skull from fracture.

On her return she complained of slight headache (nothing worthy of attention) and loss of her usual appetite. Her tongue was coated white.

About a week after her return she mentioned the conversation above stated to her uncle, who tried to quiet her anxiety, apparently successfully. A few days afterwards she told her uncle that she thought she was losing her mind. When asked why, she said she could not remember where she put things, nor where to look for things she wanted.

A protracted meeting at the church was in progress, visiting ministers came, and my patient had still more domestic labor and anxiety. Her uncle was prostrated by over mental work, which still added to her mental strain. As soon as he was able to leave his bed she again told her uncle that she was losing her mind, and begged him to send her to an asylum. He sent for me in haste, as he feared that she was seriously ill. I examined the patient, but could detect no symptoms of mental derangement. The next morning however she was laboring under intense mental excitement with high temperature, and pulse 130 to 150. This occurred about twelve days, perhaps fourteen, after the fall. It is now about four weeks since her insanity first appeared.

In her delirium she now accuses her uncle of an intention to marry and leave her homeless; accuses herself of stealing, and her uncle of criminal intimacy, and of having given birth to a child herself since being sick, etc., etc.

For two weeks she ate nothing, retained her urine as long as possible, and was very violent, watching every opportunity to kill herself. She is now eating reasonably well, sometimes answers questions reasonably—in a word, has short intervals of reason, but is *sleepless*.

Bromide and chloral have failed, in small or large doses; conium is no better. Morphine is the only drug that has quieted her paroxysms. I would have tried hyoseyamin but could not procure it.

An inquest has been held. She has been adjudged insane, and I am now waiting for your advice. I am in an uncomfortable situation. Some wiseacres accuse me and some others of plotting to get the woman away to cover up some scandal. The only thing however that causes me to hesitate is this: Has the fall on the back of the head produced patholog-

ical changes in the brain, resulting in her mental aberration? or, is it the result of a long mental strain of anxiety, sorrow and worry? Her menses have been regular and painless. There is no tenderness perceptible over uterus or ovaries. Her temperature is about 99° to 100°. Her pulse, when quiet, is about 90 per minute, but when excited runs up to 140.

She is dark-skinned, eyes and hair black. She catches fragments in conversation correctly, but cannot place herself in harmony with her surroundings.

She is poor but pure, and of good family.

If you can give me any light to direct me, out of the storehouse of your ripe knowledge of disease of the mind, I shall be ever grateful.

Respectfully,

It is not surprising that, under strain and violence, even the brain of a young person without hereditary tendency to mental aberration, should become deranged.

For such a case we would advise, in the beginning, gelsemium, aconite and mercury, suspending the mercurials in a few days, and continuing or withdrawing the aconite and gelsemium according to the existence or disappearance of cerebral febrile symptoms, and prompt removal from her now unhappy surroundings.

The therapy of suitable environment for the insane is the chief study of the practical alienist. Environment is to successful psychiatry what suitable apparatus is to surgery.

The mind disordered, like the broken limb or the sprained joint, must, as a preliminary to all other successful treatment, be placed in conditions favorable to restorative repose.

We remove the burnt limb from the fire and the broken body from the debris of the fallen building.

In every form of affliction, we take off whatever burdens the patient bears so far as we can. We should do the same with the mentally maimed. With such a patient in the hospital and surrounded by new environments, the chloral or the bromides, the hyoscyamin or the morphine, as each may be indicated, acts better and the nutritional remedies—the iron, the wine, the malt, the beef and the hypophosphites, make force that is not so speedily destroyed by the friction of adverse surroundings.

There may be no place like home for the happiness of the happy sane: there certainly is no place like home to the unhappy insane to aggravate his or her misery in most cases. Only the wisely experienced alienist can, as a rule, determine the exceptions.

There is an especial and obvious reason, aside from the immediate sanitary welfare of the patient, why such a patient as this should be removed from home. It pertains to the unfortunate and painful nature of her delusions.

Delusions are understood and justly estimated at the asylum because their nature and cause are there understood. They are not so correctly regarded outside. The delusions of the insane, freely expressed at home and spread abroad as truth by the tongue of thoughtless or malicious scandal, have blasted many a heart and home. It is the duty of the physician to save both patient and friends from such harm.

This editorial note is not for the alienist. It is for the every-day ordinary practitioner, to whom insanity is always a perplexing problem, and the right disposition of his insane patients a vexation of spirit; and for him we conclude with one of Dr. John S. Butler's precepts, viz:

In the application of moral treatment it is of vital importance so carefully to scrutinize the environment of each patient as to avoid as far as possible all depressing or exciting influences.

The Pyrophobiac and the Pyrophile.—Inconsistency in medical observation and conclusion of similar facts are singularly more common in the medical than in the legal mind. A lack of logic in deduced conclusions from observation is often singularly prominent in medical reasoning respecting certain psychical phenomena symptomatic of physical cerebral disease. For example, the multiform manifestations of morbid dread or fear, the numberless phobias which, singly or in groups, distress the neuratrophic organism and cerebrasthenic brain, and are accepted as possible and demonstrable psychical phenomena, even when displayed in the most limited deviations. The pyrophobiac, the gynephobiac, the syphilophobiac, claustrophobiac, astrophobiac, lyssophobiac, mysophobiac, toxiphobiac, etc., is recognized as morbid in limited degree. He is considered to be in a sense monomaniacal, especially when his disordered fears so dominate him as to interfere with that normal inhibition of the display of morbid psychical display common to the sane mind and absent or impaired in insane mental organisms. But let the uncontrollable morbid dread be transformed into an abnormal and not self-restrainable impulse, clearly unnatural to the individual, unless it be palpably and perceptibly

associated with other and conjoint morbid displays and its existence as an evidence of disease is denied because insanity, say these psychiatric but not psychological logicians, must always have a number of confirmatory symptoms, simply because it usually does.

The kleptomaniac, they reason, is always a fraud or a fiend unless and until he displays evidence of his insanity in some other and different direction. He may have a morbid dread of fire and be dominated by it unto death, just as the neurophobic is of losing his life in some other way, without other marked evidence of insanity; but these psychiatric philosophers see nothing inconsistent with the fact of insanity in the limited dread, while they do in the destructive impulse. The man who flees in alarm, but without real cause, from destruction by flood or sword or fire, and the man who, similarly, takes his own life, we regard as insane; but if he seek the life of others or to destroy the property of others we suspect not his sanity but his *insanity* and deny the possibility of stealing, especially as the product of disease, even though we may concede it possible for a man to sometimes kill in morbid frenzy from no other incentive than disease. True, if we wait long enough after an act of insane incendiarism or homicide other symptoms are likely to appear in the downward progress of the disease, but sometimes the act itself, the arrest which follows and the changed environment and the removed exciting cause, may work a cure, and then an execution settles the diagnosis and the prognosis of the patient at the same time.

There are often concomitant physical symptoms, and some psychical, of pyromania and homicidal mania, such as unusual constipation, previous insomnia, febrile states, hyperæmia cerebri, malarial toxhæmia, alcoholic toxhæmia, and delirium, vascular, cardiac, hepatic, renal, gastro-intestinal disturbances, cerebral imbecility, etc., and sequent psychical perversion very often but not always. We are not justified in ruling out pyromania or kleptomania as impossible because some other morbid psychical perversion is not at the same time manifest, though we do undoubtedly often find other confirmatory symptoms to confirm our conviction of insanity from a causeless, motiveless and only disease-prompted act of incendiarism.

In the light of insanity, therefore, we see the recent, unfortunate and extraordinary case of incendiarism just as the *New York Medical Record* regards it, which resulted

in the destruction of the Hospital for Ruptured and Crippled, in that city:

For several weeks a series of attempts, one of which was successful, to set fire to the building, were made. At last it was discovered that the author of the mischief was a girl of about eleven. She confessed her crime and expressed some sorrow, but was unable to tell why she acted as she had done. According to reports, she was an intelligent and attractive child, and had shown no signs at any time of entertaining malice, or of having criminal propensities. Her mother was reported to be insane.

The *Record* thus further remarks:

The case seems to be one of instinctive juvenile mania of Morel. Clinically it belongs to the form of monomanias known as pyromania. This peculiar disorder is known to affect the young more especially, and more often the female than the male sex. It is classified by Emminghaus ("Die psychischen Störungen im Kindesalter") among the anomalies of instinctive feelings. By French writers it would be classed among the monomanias of the degenerate.

Emminghaus states that the fascination for fire, *Sucht nach Feuer*, is peculiar to many children. If of healthy organization they soon learn its dangers; but if there is defective volitional power, it leads the victims to accidents and even crimes.

Dr. More, in an article upon incendiary monomania, calls attention to the fact that it often occurs among young persons, and cites a case of Henke's: A girl of fourteen, who suffered from nostalgia, twice set fire to the house in which she lived. She said that she was continually possessed with a desire to burn the house, and she had the delusion that a ghost was urging her on to do it.

While pyromania is not common as an isolated symptom of insanity it is not so extremely uncommon as the chief and only apparent symptom for a time, at least in the history of an insane individual, and there are not always other signs of insanity present that would signify anything if the pyromaniacal displays and impulses were absent.

Pyromania is often the expression of an unexpressed delusion. It is also the definite expression of an undefined impulse to destroy which may show itself later or may have been displayed before in other destructive directions. The impulse may be instinctively, definitely, and limitedly or indefinitely, to destroy. But pyromania is a fact, whether observed alone, grouped with, preceded or followed by other morbid psychical symptoms, and as such we must recognize its insane basis when we cannot otherwise explain it, whether we succeed in coupling it with other insane manifestations or not.

The ancients may have seen it, as through a glass, more darkly than us, but the human eye was as good to see and the human mind as good to reason in Livi's as in our day; and, though we live in a livelier age, pyrophobia and kleptomania, as disease and not crime, are no new things under the sun. On this subject, as Terrence said upon another, it may be reiterated, "*Nullum est jam dictum, quod non dictum prius.*"

The Rights of the Insane.—It is gratifying to the editor, and to every reader of the ALIENIST AND NEUROLOGIST, to note the growing recognition of the rights of the pauper insane, to such adequate care at the hands of the public, as will give them the best chance for restoration. They are evidently soon to be generally regarded as entitled at the hands of municipal and county government, to something more than restriction, and sustenance when they cannot hurt themselves, or annoy, or endanger the peace, or safety of others. They are destined to soon receive the skillful treatment their grave malady requires, and to be given a chance thereby to regain the rational life imperiled or lost.

We are to take these wrecked beings in life's stormy sea into our comfortable ships, and carry them back if we can, to the safe and serene haven of rational life, not to leave them on a barren island with a stock of clothing, and a supply of food, and call that a rescue.

We judge this is to be so from the tone and tenor of recent events outside of the asylum circle, which has always been the friend of the insane, and sought to secure for them their just rights, to early and adequate medical care and treatment, that they might, when possible, be restored to the usefulness of rational life, and the support again of the State.

Many insane paupers of to-day, were once pillars of the State, whose mental foundations disease has undermined.

Philanthropy and true public policy combine to dictate the humane, and wise course to pursue in regard to them.

At a recent meeting of the Academy of Medicine, of New York, a resolution was unanimously adopted, endorsing the bill prepared by the State Charities Aid Association, in regard to the care of the pauper insane

in State hospitals, and recommending its enactment by the Legislature.

In seconding the resolution, Dr. C. R. Agnew said that for thirty years he had been interested, with others, in the amelioration of the condition of the pauper insane in the State of New York, and that the first result of the agitation of this subject had been the establishment, by the State, of the admirable Willard Asylum. Later, those at Binghamton and Poughkeepsie had been started. This opening of these institutions had withdrawn a considerable portion of the pauper insane from the country poor-houses; but now an effort was being made to establish local asylums for the insane in various counties.

The chief reasons alleged for this movement were the saving, to a considerable extent, of the cost of transportation of insane patients, and because it was claimed that the cost of maintenance in the State hospitals was unnecessarily great. One of the counties declared its willingness to undertake the care of its insane at a cost not to exceed 97 cents per head per week, and another for \$1.19. At the Willard Asylum, where the number of inmates is now nearly two thousand, the expenses could not be reduced below \$2.25 per head per week; but this included the best scientific care by expert physicians and specially trained nurses, the amusement and intellectual training of the patients, and their employment in the work-shop and on the farm connected with the institution. The counties, however, did not propose to give the same character of care to their pauper insane as that given by the State hospitals, as this was impossible of attainment for any county at a weekly cost *per capita* of \$1.50, the charge to which the counties were subject by the provisions of the State Charities Aid Association bill. The expense of new or improved county buildings, and of a larger number and higher grade of attendants—to say nothing of maintenance and medical treatment—would impose a heavier burden on the taxpayer of the county than the additional increase of his State tax required to perfect the system already established by the State.

It was a fact, also—Dr. Agnew continued—that some of the counties had tried the experiment of having their own insane asylums, and unsuccessfully. Thus, Rockland county had erected one at an expenditure of \$20,000, and it had now been abandoned. If the pauper insane were

cared for by the counties they would be under the charge of the supervisors and superintendents of the poor, and these men besides knowing nothing of the proper care of the insane, were altogether too close to the tax-payers. This class of cases could, in fact, be properly taken care of only in an institution where there was a board of managers which was directly responsible to the State, where everything was done in the full blaze of public scrutiny; and in the State hospitals of New York he believed that the most enlightened modern treatment of the insane was carried out in as thorough a manner as was at present attainable.

The *New York Medical Record* likewise comes to the aid of these children, with a plea met as the ALIENIST AND NEUROLOGIST has aforetime made a plea quite familiar by often repetition to most of the many asylum Superintendents, who regularly read this journal;

"That it should be necessary to raise the medical voice in favor of "State care for pauper insane" seems hardly possible.

The opposition to and the false arguments which have been raised against the bill now pending before the Legislature, entitled "An act in relation to the care and custody of the pauper and indigent insane in the counties of this State, excepting New York, Kings, and Monroe," prove, however, the necessity for a note of "no uncertain sound" from our profession in favor of State *versus* County care.

The policy of our State from 1855 to the passage of the law, in 1871, giving power of exemption from the provisions of the Willard Asylum Act to the State Board of Charities, has been unswervingly that the "poor insane are the wards of the State."

The necessities leading up to this policy are well known to those who have made any study of the history of this afflicted class.

The horrors of the so-called care they received in poor-houses and prisons seem almost incredible, viewed with the light of our present knowledge and humanity; and the question must now be asked, most seriously, shall this State desert her high standard, and drift backward into any of the evils from which she has been trying to free herself?

The struggle begun by the County Superintendents of the Poor crying to the State for help, in 1855, resulted in the passage of the Willard Asylum Act, in 1865, by the provisions of which all chronic insane were to be sent to State asylums.

Since power of exemption from this act was given to the State Board of Charities, in 1871, seventeen counties have been relieved of its action, and we may safely affirm that the number of counties seeking exemption is, and will continue to be, rapidly on the increase.

Appropriations are now being asked for in many counties; other counties are building asylums. Let this go on, and the time will soon have passed when it will be possible to check the evil.

In face of this danger, let us consider what are the advantages of State institutions ; what is the exact state of things in the exempted counties, and what is the remedy.

Where, in the course of our medical experience, can we find patients who require early diagnosis and treatment, careful classification, and constant watchfulness more positively than the insane? Add to this the moral treatment, which is ever growing in its importance, and how imperative does it become to have at hand all those resources which a fully-equipped institution alone possesses.

This is what State care means: An asylum in the hands of a Medical Superintendent who is an alienist, aided by intelligent assistants, careful, trained nurses, and all that science can provide, with every facility for occupation and diversion, according to the demands of each patient. Over all this the ever-watchful care of a Board of Trustees, entirely removed from politics, appointed by the Governor.

Of the present trustees of Willard, consisting of eight members, four have been in office since the founding of the asylum.

Now, we must remember that in the County system the Superintendent of the Poor and the Board of Supervisors stand for what the trustees of a State institution represent.

They are elected annually, and to their political power only they owe their positions. In this short term they are supposed to acquire the ability to do all that the experience of years alone has taught the management of a State institution.

They tell us that County asylums should be built, and that they can be made equal in every way to State institutions.

Does not an appropriation for a County asylum begin and end in politics?

The statement that per-capita cost for the same degree of care is to be reduced by County care is false. It can never be reduced in the County as compared with State institutions, except by a *reduction of the standard of care*.

For this statement we have the authority of the figures and facts presented by Dr. Wise in his admirable paper, read before the County Superintendents of the Poor of the State of New York in 1886. His deductions are unanswerable; and the State Commissioner in Lunacy, Dr. Stephen Smith, confirms it in his criticism of the way the rules of the State Board of Charities are disregarded, in the following words:

"They have not been strictly conformed to in most of the asylums, but more lax methods have been adopted, greatly to the detriment of the service and general management."

To this testimony we can add that of visitors who have made thorough investigations, all of which goes to prove inferiority of care of the insane in these counties.

The present law does not work well. County asylums allowed to keep their chronic insane are keeping acute cases; while counties allowed to keep a certain number are keeping more than that number. Laxity will creep in, rules and regulations cannot be enforced, and as the number of County asylums grows the trouble must increase, till all intelligent State supervision will be lost.

A crying evil of the present law is the definition of the word "chronic."

The distinction is simply one of time. After two years the law really rules a case *incurable*, and the patient can be taken by the Superintendent of the Poor to his or her county and worked on the town farm. This is monstrous.

The bill now pending provides for the gradual return of all insane to State care, except in the counties of New York, Kings, and Monroe. These latter counties are not exempted from the action of the bill for any reason except that it is not practicable at this time to legislate for them.

The State is to be districted, each district to have its asylum; increased accommodations to be provided as needed, and the details of transfer are most carefully provided for.

The State asylums, having their executive buildings and entire plant in readiness, can add, at insignificant cost per capita, the needed increase in accommodations.

The stand must be made on the medical merits of the bill, about which there can be no compromise, and it behooves every medical man to give to this humane and scientific measure all the support at his command.

We hope the *Record* and all reputable medical journals of New York, will continue to fight till the rights of the insane are secured to them by ample State care.

Cerebral Surgery.—On this important subject the field of therapy enlarges, the chief danger of the hour however, being that which has overtaken some of the brilliant and undoubtedly valuable procedures (when wisely resorted to) of surgical gynecology, namely, of being performed without sufficient justification.

These rash young "Revenue Cutters" in neuro-surgery, who, ever seeking to dazzle and astonish with their scapulary skill, are continually startling the profession with their recklessness.

A hopeful prognosis from a rash resource is natural to the young, inexperienced, newly-skilled in novel surgical procedure. The young surgeon, like the young warrior, is captivated by dash and desperation, and loves, for fame's sake, to take narrow chances. But the cases of the young warrior and surgeon are different. The one risks his life to ruin his foe, the other risks the ruin of his friend if he makes a mistake in his estimate of the outcome of his procedure. The one may destroy his foe and himself for the reward of glory, the other may destroy only the one to whom he stands in honor bound as friend, guardian, and protector.

Dr. Chas. W. More, the editor of *Pacific Record of Medicine and Surgery*, gives an interesting abstract of Prof. E.

Von Brigman's conclusions as to the circumstances justifying surgical interference for the relief of certain intercranial diseases which may be found with some further but non-essential elaborations in *Arch. f. klin. Chir.*, vol. 36, which we place with pleasure before our many readers, who have just now become so especially interested in surgery of the brain, through the brilliant and conservative achievements of Victor Horsley, and his demonstrations of grand possibilities in cranio-section and encephalosurgery.

I. Deep cerebral abscess. The necessity of removing a purulent effusion in the brain by means of surgical therapeutics, is not controverted in principle. For every cerebral abscess, abandoned to itself, causes irremediably the death of the person affected by it, either through irruption into the ventricula, or through meningitis. There is only the difficulty of diagnosis, to oppose trepanning for the evacuation of pus from the cranial cavity. In the first place, etiology is to be searched for this purpose. Besides metastatic and tuberculous abscesses of the brain, traumatic abscess (open wounds of the hard or of the soft cranial walls) and abscesses propagated from other purulent affections in the skull, especially suppuration in the ears are to be taken into account. The latter two kinds only offer a prospect of successful surgical treatment.

Concerning diagnosis of traumatic cerebral abscesses, von Bergmann distinguished between cortical abscesses, located immediately beneath the point of fracture, where the contusion of the brain exists, and the deeper abscesses located beneath the cortical part. Cortical abscesses make their appearance in acute shape, and from the appearance of the wound (peculiarity of granulation, oozing of pus), the danger is often easily discovered. But in case the retention of pus succeeds underneath the cicatrized epidermic wounds, these abscesses are a delusive imitation of traumatic, purulent convex meningitis with its irritative and paralytic symptoms. As a differential diagnostic, von Bergmann sets forth that the surface abscess, in contradistinction to the impetuously appearing leptomeningitis, requires time (8 to 14 days) for its development, provokes symptoms of extension in a surprisingly slow manner, and shows in its initial and paralytic phenomena, a certain selection with regard to its seat. Deep abscesses, on the contrary, originate weeks, months and even years after the trauma; between the abscess and the osseous structure, there is sound tissue. Concerning the mode of vuleneration preceding the traumatic cerebral abscess, one fact is certain: Each traumatic cerebral abscess has been preceded by a wound, communicating somehow with the exterior world. Osseous splinters and foreign bodies, which have remained in the wound, are disposing elements of cerebral abscess, which is the reason of the high importance of trepanning as a prophylactic method. For abscesses, originating with auricular affections, von Bergmann establishes certain positive diagnostic signs. Chronic suppurations only, meaning suppurations of the middle auditive conduct, induce cerebral suppuration. The location of these abscesses is typical, either in the tem-

poral lobe or in one of the hemispheres of the cerebellum. And finally, brain abscesses after otalgia are characterized by their imperceptible beginning.

The symptomatology of every cerebral abscess, whatsoever may be its origin, is divided by von Bergmann in three groups:

- 1, Symptoms depending on suppuration itself.
- 2, Symptoms indicating an increased intracranial pressure; and finally,
- 3, Symptoms corresponding with the seat of the abscess.

With regard to the symptoms of the first group, the febrile actions are very characteristic: The fever appears by fits, and then disappears for weeks and even months. The febrile action appears with more intensity at each return. As a significant circumstance headache is to be mentioned which, during the febrile action, presents a state of exacerbation. In many cases, cranial percussion offers useful indications for localization. As a valuable diagnostic symptom may be mentioned the circumstance that, during the fever, the frequency of pulse diminishes and the somnolence of the patient becomes notable. On the other hand, the appearance of an obstructive papilla in cerebral abscesses is very little constant. Focal symptoms are furnished by the abscess in such cases only when it exists in the regions of motorial action; they are wanting, when it has its seat in the frontal, occipital or temporal lobe. Nevertheless, after careful observation some have succeeded already several times, even without existence of focal symptoms, in operating, with good result; the author, among others, reports a case where the abscess was located in the left frontal lobe. For diagnosis of localization in the several lobes, we refer to the original article. In typical cases only, von Bergmann is disposed to perform operation, and especially then only when the above mentioned etiological conditions are present. But in such cases, according to the author, it is not, as formerly, the exploring needle, but the knife, which assumes its right.

II. *Cerebral tumors.* In the first place, the author remarks that surgical treatment of cerebral tumors presents less prospect of success than the treatment of endocranial suppurations. If the seat of the tumor, in consequence of the lack of focal symptoms, cannot be determined, not even an explorative trepanning ought to be attempted. It is self-evident that the kind of tumor is of great importance. Gummata and tuberculous conglomerations ought not to be touched. It is true that Horsley, who in all questions of cerebral surgery has been a kind of a path-finder, has in one case removed a caseous tubercular nodosity from the surface of the cerebrum (death 19 hours after operation, dissection showing general tuberculosis), and in another case tubercular conglomerates of the cerebellum, this time with successful result. Yet, pathologic anatomy teaches us that a tuberculous nodosity, sharp-edged and isolated, is one of the rarest occurrences.

With regard to operation of carcinomata, gliomata, sarcomata and gliosarcomata, cysts and myxomata of the brain, if it is to be practicable at all, it is necessary, first that these tumors should not be too large and too extended, second that they should not be diffused in a zone of red and red-yellowish softening, and finally, as already stated, that, by their location,

they should constitute symptoms admitting of exact localization. Starting from these conditions, the author investigated 100 cerebral tumors, as described by Hal White from his autopsical researches, and he demonstrates that out of these 100 cases 9 could have been operated upon, but that out of these 9 one only was diagnosticable. But very great is the danger of every cerebral tumor operation, on the one hand on account of consequential bleeding, and then on account of consecutive cerebral œdema. In this particular, surgical technics are capable of considerable improvement. Against the danger of excessive bleeding, von Bergmann recommends to take hold of each larger vessel, and to tie it, and then to apply compression and derivation through iodoform gauze with secondary suture. (Cf Bramann, *Arch. f. Klin. Chirweg.*, vol. 36, p. 72.)

At the end of this chapter, the author resumes the operations in this field of cerebralsurgery, as practiced until now. The total number of cases is 11, among them 3 "not sufficiently authenticated," and which therefore should be omitted. Permanent recovery has been attained in one case only, 4 months after operation. In another case, epileptic convulsions appeared 3 months after operation, possibly attributable to cicatrization. All the remaining cases show unfavorable results. In one case, there was relapse during the very vulnerary treatment; 5 cases perished in consequence of the operation, and in one case the tumor was not found by the operation.

III. *Epilepsy.* The author recalls Maclaren's observations, in which epileptics were subjected to greater operations, not on account of their epilepsy but on account of other affections, as, for instance, cancer. It so happened that they also remained exempt from their attacks for a considerable time. Keeping this fact in view, and considering with keen eye the therapeutic successes of trepanning in epileptics, it is to be seen how much in statistics truth has been affected.

To elucidate the effective surgical results, it is advisable, with the neuro-pathologic school, to maintain the distinction between genuine and reflex epilepsy. From the latter category, the author has been in a position, once to observe a doubtless recovery, another case is problematic, in three of his other cases cicatricial excision has decidedly failed to effect a cure.

The astonishing fact that reflex epilepsy so seldom occurs after lesions in neck, trunk and extremities, and so often after lesions of the cranial roof, is explained by the author in the following way: that we have to attribute these to the concurrent lesion of the cerebral cortex, and for this reason he considers traumatic epilepsy in cephalic lesions as part of cortical epilepsy. This cortical epilepsy, first described by Jackson and called by his name, "Jackson's cortical epilepsy," takes the same typical course in man as in animal whose motorial cerebral region has been electrically excited. The irritation begins with the muscular group, corresponding with the cortical centre, electrically excited, in the cortical layer. The convulsion may remain isolated (mono-spasm), or may attack the whole half of the body, and even the whole body (hemispasm and general epilepsy). The progress of irritation is generally as follows: from the field originally affected, the nearest approximate centre is affected; from there

the next one, and so on. The convulsion passing to the other, *i. e.*, the homonymous, side, the muscles are set in motion in a reverse direction, ascending from below to above. Cortical epilepsy, moreover, is distinguished by transient, or more or less lasting, hemipareses or real paralyses in the muscular regions, first invaded by the convulsions. Only such cases where these symptoms are present in a pronounced way, are considered by von Bergmann a fit object for successful intervention. It is self-evident that trepanning alone is not the question in traumatic cortical epilepsy, that on the contrary the entire cicatric is to be removed from the cortical part. Horsley has obtained in two cases good results by excision of the epileptogene cortical region, while in another case (just as the author himself in an interesting case) he operated without result.

In conclusion of his article, the author points out, as an indication of trepanation, the fixed, strictly localized headache which, after cranial contusions, frequently remains. At one time, the author trepanned a young girl who, six months before, met with the accident of a stone falling on the right side of the skull, and he found the bone materially attenuated; then, a quantity of old, tar-like blood oozed out, when the dura became visible. The removal of the old epidural sanguineous effusion has cured the patient permanently.—*Arch. f. Klin. Chirweg.*, vol. 36.

The Prophylaxis of the Brain considered in relation to the Health of our Public Men—the Strain upon their Vasomotor Systems.—

So much more is publicly said through the secular press and so much more interest than formerly is now manifest on the subject of the health of our prominent men that it is not amiss that we should mention the subject also, though we must, for want of time and space just now, but cursorily discuss it.

The personal sanitation of our public men is sadly and singularly neglected. Hygienic precautions essential to save them from premature wreck are seldom taken by themselves. Cautious and conservative in everything else appertaining to their personal, business or public interests, they are inexplicably reckless and indifferent to the preservation of their health. They usually leave that matter as they leave their funeral arrangements, to the care of their nearest friends or relatives.

When such men die, as they so often do, of disease which, if taken in its incipency and managed by thoroughly skillful medical hands, they might have recovered from, it is usually found that while they have prudently provided a good life insurance endowment, through a sound and carefully-selected life insurance company, and made a will with proper bequests that cannot be broken, etc., they have been attended, in the

most critical time of their last illness, in its incipency, when broad knowledge and wise advice might have saved them, by some obscure mediocrity in medicine, incapable of comprehending the gravity of beginning disease in those whose whole neural mechanisms, cerebro-spino-neural, but especially their ganglionic systems, are under perpetual high tension. The family medical attendant who has treated the wife in confinement or the baby for a colic, a croup or dentition, and who may or may not be a competent man to advise and willing to designate what other medical counsel may be required, comes in at this critical time in the life-strain of the great business or public man.

The great man, never before seriously ill, and accustomed in former years, when the daily fund of accumulated nerve force was not so completely exhausted as in his later years, since the demands of public duty and brain energy have been doubled, makes his customary optimistic diagnosis that the ailment is insignificant. This view, if acquiesced in by the family attendant, as it often is, or but feebly protested against, leads to the patient's mortal harm.

Great men who have good physicians to rely upon often do not consult them in time. They seem never to care for either physician or clergyman till satisfied they are struck with a probably fatal illness.

They would promptly consult an architect if the walls of their house began to crack, or notify the fire department if the roof were ablaze, or the police authorities if burglars threatened, or consult lawyers if their property was imperiled. But the conservative and prophylactic resources of Medicine—a profession as fertile in resources as any other for the welfare of mankind—are ignored by many otherwise great men, and accordingly we often find, in some sudden emergency of great peril to their lives, when in all the other affairs of their lives reasonable wisdom marks their conduct, some little, infinitesimal, impotent disciple of some crank-ism, or pathy—mind-cure, faith-cure, clairvoyant, magnetic, eclectic, hypnotic, Thompsonian, homœopathic, vitapathic, *et id omne genus*, with a part or none of the resources of the great diagnostic and healing art, seeking or pretending to solve the greatest problem and fight the greatest battle of the great man's life.

There is skill to see far and deep, and there are great and wonderful resources to heal and to save in the great

science and art of Medicine—resources so great that mediocrity cannot possess them—resources of diagnosis and powers of cure that are not gifts but acquisitions that come to physicians like legal acumen comes to plodding students of the law. They are not showered by the gods upon the presbyopic, monoptic, hemiopic, nystagmatic-minded oracles that steal through legal doors that ought to be closed in the temple of Hygeia, and lead the people to ruin by incompetent advice when they might by others be saved.

We come now to the second caption of our subject, a subject not *mal apropos* because it is in a knowledge of this wonderful organic mechanism which is not familiar to those who are not thorough and deep students of our science, that broad experience triumphs in its prophylactic and curative precautions, when our men of affairs—with overstrained, overworked brains—come under their observation and advice.

Not long ago a great political party lost a great leader and the country a great soldier of the late war. To one familiar with his habits of ceaseless mental energy, the malarial vasomotor damage to which he had been exposed at his home in Southern Illinois and elsewhere, the final rheumatic attack which carried him off, though itself a deep-seated nervous and largely malarial disease, was not all of his malady. Logan did not rest enough when he sought recreation on the Pacific Coast, and was spending night and day with his old comrades of the Grand Army of the Republic. Later, a chief justice of the United States Supreme Court, after a prolonged trial of a great and judicially exhaustive cause, involving far-reaching study and investigation, taxing to the utmost, as it must have done, his neuro-vital powers, contracts a cold, a congestion of the lungs, a fatal vasomotor pneumoparesis, which might, by prompt, immediate and adequate rest without subsequent exposure, have resulted favorably. His advanced age and his immediately previous nerve overstrain enjoined, to those who know the nervous system well, extraordinary precaution. Pneumonia, in the advanced in years, because especially of lessened resistance, especially through vasomotor weakness, is peculiarly dangerous—so that “a cold on the lungs,” even though it appear slight and might be passed unnoticed in the young and neurally vigorous, is not ignored by any experienced wise physician.

The fate of Mr. Conklin, now sadly sealed and bewailed by political friend and foe alike, how easily, for the country's pleasure, might it have been averted, had he consulted his physicians the morning immediately after that hazardous and arduous tramp up Broadway the night before, through the blinding blizzard and snow blasts!

The time when the great leader thought he only had a cold in his head and an insignificant boil in his ear was the time when his malady required the skilled insight of science. There was a time when, very early in the history of Mr. Conklin's illness, by adequate and complete vasomotor control and vascular relief, the sequent purulent stage of his pachymeningitis and the subsequent necessary trephining might have been averted and the brain of the patient saved from peril of death or its equivalent hopeless mental aberration.

Medical aid is too often invoked by the otherwise intelligent and great, in the last hour. The profession is too often asked to extinguish the flame that threatens life after too much of the structure is destroyed.

It is fortunate sometimes for our great men that they are suddenly overwhelmed with vasomotor exhaustion and congestive cerebral apoplexy before the age arrives when overstrained vessels rupture, and overwhelming them so completely that they must rest and take the needed treatment. If in such a crisis the great man happens to have a wise physician he is safe.

In this connection the case of Mr. Blaine comes to mind. He fell on the church steps unconscious, remaining so for twelve hours, from the direct effects of overheating and too warm clothing for the season, and got a timely and much-needed rest and warning which he has ever since wisely heeded. In this case he owes his salvation from a fatal apoplexy to the time of life when this vasomotor exhaustion overtook him; to the opportune heat and the unwise advice he followed, to wear heavy flannels in summer. He probably could not have had such an attack and lived just after the late presidential contest in which he took so conspicuous and active a part.

Nothing it seems will make our great men sanitarily prudent except to strike them on the head, knock them down and give their overstrained ganglionic and associated vasomotor system a period of enforced rest.

We might go over the list of great overworked business and professional men who fall suddenly stricken,

chiefly through over-vasomotor tension, the strain upon the brain, as it is commonly called; and most of them who die in the height and flush of apparently vigorous manhood die of preventible states of their nervous system, which have either precipitated or molded or permitted the final breakdown of the overworried, overworked and hygienically careless.

The strain of great minds in medicine, law, theology, politics, religion or business, is upon their brains and nervous system. Their preliminary breakdowns are nervous. Their dyspepsias, their insomnias, their Bright's disease, their diabetes have their incipency usually in improperly-timed brain strain and injudicious nerve tire. Few great men do absolutely more brain-work than, under judicious neural sanitary precautions they ought to be capacitated for doing; but their late hours, irregular meals, personal and social vices and excesses and unevenly proportioned work, making mental and nerve waste at times too greatly preponderate over the normal reactionary recuperation, break them and unfit them for resistance to the ordinary causes of disease.

If our great men cared for their health as they do for other matters so wisely and so well, they would live longer and the country would be spared its constantly-repeated surprises, at the unexpectedly sudden mortal blows which strike so many of our public men in their prime and prostrate them forever.

Embarrassing the Commitment and Preventing Prompt Early Treatment of the Insane.—The proposed new law of New York on this subject demands the attention of all friends of the insane.

In every community there are people of more or less influence who imagine they live to agitate and overturn. They mistake change for progress and call it reform, and a portion of the sensational press usually finds it profitable in subscribers to coincide with these peculiar people.

New York has now a good law—quite good enough for the general welfare of the sane and insane of that State, but some people of the Empire State want a better one they say—one that will keep at large, by its stringency, all but the most marked forms of insanity, and keep certain acute forms out till the hopeless stage is reached and citizens are lost in hopeless insanity who might be saved, all for fear some one apparently sane might be committed

by the medical profession, as if it were possible in this free country to keep a really sane and perfectly sound mind long in a lunatic asylum with the ordinary freedom of action which exists among the inmates and the free intercourse between patients and employes.

We quite fully concur with the *New York Medical Record* in what it says upon this proposed measure :

It must be presumed that the advocates of this bill are really inspired by humane motives, and believe that they are providing measures by which the sane cannot be committed as insane. But the practical results of such legislation would be that no better safeguards would be provided against the commitment of the sane, while untold hardships would be inflicted upon the insane. It is a matter of history that the verdicts of juries in cases of alleged insanity are reliable only in proportion to the competency of the medical witnesses in each case. Hence the opinions of juries, in themselves, are unimportant, but the competency of medical examiners is all-important. While it is probable that our methods of procedure in commitment might be made more definite and reliable, it is certain that the method proposed in this bill would be a retrograde step of the most serious character.

The present law of New York, as the *Record* says, is a transcript of the English law. It secures the Englishman's liberty, and what secures the average Briton in his personal rights is good enough for the average American, as practice usually proves.

The English law of which the New York law is "nearly a transcript" requires :

That the person shall first be personally examined by two physicians of reputable character, graduates of an incorporated medical college, and who have been at least three years in the actual practice of their profession, such qualifications having been certified to by a notary or judge of the Court of Record. These physicians fill out blank forms of certificates, stating their reasons for believing the person insane, and before a judge make oath to the correctness of their certificates. These certificates are then presented to a judge of a Court of Record, who may approve the finding of the physicians, or he may take additional testimony, or he may summon a jury and have a full trial. On the approval of the certificates by the judge the papers are complete, and the person may, within ten days, be confined in an asylum. The procedure is certainly very simple, and proceeds on the principle that the insane are sick people, and require hospital care; that they should be disturbed as little as possible, and that friends are generally very sensitive about giving publicity to the nature of their affliction. That the law has worked well in England there is no question, and it has yet to be proved that any harm has befallen an individual during the sixteen years that it has been in operation in the State of New York.

This would be good enough for us if we were to become insane.

It would be a pity to see New York or any other State in this advanced country retrograde in its legislation in the interest of the insane, like Illinois has done, so as to require a tedious trial and jury commitment, as if insanity were a crime instead of a disease—as if the doors of a hospital for the insane should not swing open as freely to the touch of an afflicted lunatic as to that of any other sick person through his friends. A thoroughly well man can go out as readily from a hospital for the insane as from any other hospital. Only his affliction keeps him in one as in the other; and when all the sensational false commitments of the insane in this country have been sifted to the bottom and all of the facts brought to light it has been found that insanity did really exist. The only question that has ever finally arisen in our minds in regard to some of the few was whether they were detained too long after mental convalescence; and the trouble some apparently recovered patients have made has generally proved that they were not fully convalescent or fully appreciative as their sane physicians were of the necessity of perfect convalescence and security against relapse of so grave a malady as insanity with its sad chances of final mental obliteration.

The asylums for the insane of America are presided over by honorable men as a rule. In them personal liberty and rights are guarded as zealously as in the world outside. Their medical heads are in general men of character as well as their boards of management, and more—far more patients go out prematurely after convalescence has set in, than are detained too long.

Our reformers can do better work for the insane by securing civil service reform in our asylums than by interfering with the competent, honest medical commitment of patients. A law that secures two true and competent medical certificates, attested legally before someone lawfully authorized to record the fact and imprint a State seal, thus giving the process the character of due process of law, should be sufficient to secure any mentally sick man his rights in prompt and unembarrassed treatment.

Physicians' Dress—Some of our exchanges, starting with the *Medical World*, are suggesting a characteristic style of dress which shall proclaim the medical man.

We suggest a threadbare suit, (pill) tile hat, mortar and

pestle pants and shoes, an open empty pocket-book conspicuously displayed from one arm, a basket of alms from the other and a sash of crape and crimson or a double-edged scalpel held in bleeding hand, and crape and crimson draped, as emblematic of his own blood shed and hopes and loved ones buried, while acting in the line of duty.

This would be typical, for the average doctor is always pounding away for the good of his patients, and usually impecunious when through with his life-work and almsgiving, and he lives and dies for others. He works and wears and wastes himself, for the welfare of all humanity, besides his family, and his recompense is chiefly thanks.

He is worn out by his work if professionally successful, and neglects his financial affairs for daily needed rest. His patients are grateful to him when convalescent, but forgetful of him when thoroughly recovered, especially if he neglects too long to send his collector to them. Thus he toils and tires and dies. Oblivion entombs him, and cold neglect or gaunt starvation cares for his family. The world, as he passes over the dark river, applauds his self-sacrificing but improvident life, and trusts that the good providence of God will care for his neglected family.

They praise him that he never turned a deaf ear to the cry of distress, but unlike the grocer, the butcher, the baker, and even the undertaker, who contributed something of their store to the poor, and sold the balance at cost or half-price, he gave all. He cared for the wretched and miserable that they might live comfortably, and he himself died and left his family in want. They praised him because while they took up collections and chipped in to buy the poor fuel and food and shelter, the doctor took care of the latter in their illness entire, and threw in the necessary medicine.

Yes, let the doctor be known by his garb, and let his family be kept conspicuously before the public, that wears him unto a wearisome death—weans him, for humanity and sweet charity's sake, from his estranged wife and home and the idols of his domestic hearthstone, whom duty forbids him to worship like men of the world. Or, let the doctor become a man of business, like other men in general; make a business and not a charity of his calling, dispensing charity like other men and not like the average medical idiot, and take care of himself and his own in a manly way, meting out charity as he is able and as the paramount demands of his family allow him in common

with other workers in the world—like other men who love God and their fellow-man, and have a care also for the loved ones at home, whom, at the altar and before high heaven, they have sworn to love, cherish and protect.

We believe in the faithful doctor, faithful to humanity and his family; the brave doctor, battling the elements and the pestilence, fighting death away from the door of his neighbor and the wolf from the door of his own dear household; the self-sacrificing doctor, willing to suffer and to die if need be, that others might live, but not in that uxoricidal and infanticidal fidelity to duty, that hearkens to the cry of distress in the world outside, and leaves the loved ones at home to be murdered by neglect.

Take care of your loved ones, at home, brother doctor, and as you love them, so will you feel your duty fairly to the world without. But you cannot give the outside world all and give your family a part; and if you give it all, the world's charity will not recompense your sacrifice by any exuberant providence for your uncared-for loved ones. This does not apply if you are an inveterate bachelor, a eunuch or a monk; but it does apply with more force than our feeble words have expressed it to many a faithful doctor whom we know, and to many more whom we knew in our youth but who have long since gone to the reward of the faithful to duty, in Heaven, who might have stayed longer on the earth to brighten it, had they been just a little more selfish for themselves and their own, and a little less completely self-sacrificing to all the world but self and home.

The Forty-second Meeting of the Association of Medical Superintendents of American Institutions for the Insane, will be held at Hygeia Hotel, at Old Point Comfort, Virginia, on the third Tuesday of May (15th), 1888, commencing at 10 A. M. The Trustees and Managers of the different institutions having the care of the insane are cordially invited to attend the meetings. Following is the list of members:

B. T. Sanborn, M. D., Augusta, Maine; Charles P. Bancroft, M. D., Concord, N. H.; J. P. Bancroft, M. D., Concord, N. H.; George B. Twitchell, M. D., Keene, N. H.; Joseph Draper, M. D., Brattleboro, Vermont; George F. Jelly, M. D., Boston, Mass.; James H. Denny, M. D., Boston, Mass.; Edward Cowles, M. D., Somerville, Mass.; Theo. W. Fisher, M. D., Boston Mass.; Wm. A. Gorton, M. D., Danvers, Mass.; J. P. Brown, M. D., Taunton, Mass.; John G. Park, M. D., Worcester, Mass.; Hosea M. Quinby, M. D., Worcester, Mass.; Hy. R. Steadman, M. D., Roslindale, Mass.; Walter

Channing, M. D., Brookline, Mass.; Merrick Bemis, M. D., Worcester, Mass.; Ira Russell, M. D.; Winchendon, Mass.; N. Emmons Paine, M. D., Westborough, Mass.; Pliny Earle, M. D.; Northampton, Mass.; E. B. Nims, Northampton, Mass.; B. R. Benner, M. D., Lowell, Mass., W. F. Heald, M. D., Pepperell, Mass.; William B. Goldsmith, M. D., Providence, R. I.; John S. Butler, M. D., Hartford, Conn.; James Olmstead, M. D., Middletown, Conn.; Henry P. Stearns, M. D., Hartford, Conn.; Henry W. Buel, M. D., Litchfield, Conn.; W. B. Hallock, M. D., Cromwell Hall, Cromwell, Conn.; E. E. Smith, M. D., Rowayton, Conn.; Charles H. Nichols, M. D., New York, City; J. W. Barstow, M. D., Flushing, N. Y.; A. E. Macdonald, M. D., Ward's Island, N. Y.; John A. Arnold, M. D., Flatbush, N. Y.; George C. S. Choate, M. D., Pleasantville, N. Y.; R. L. Parsons, M. D., New York; J. M. Cleaveland, M. D., Poughkeepsie, N. Y.; J. P. Lomax, M. D., Marshall Infirmary, Troy, N. Y.; G. A. Blumer, M. D., Utica, N. Y.; D. R. Burrell, M. D., Canandaigua, N. Y.; P. M. Wise, M. D., Willard, N. Y.; C. F. McDonald, M. D., Auburn, N. Y.; J. B. Andrews, M. D., Buffalo, N. Y.; S. H. Talcott, M. D., Middleton, N. Y.; E. H. Howard, M. D., Rochester, N. Y.; L. S. Hinckley, M. D., Newark, N. J.; H. A. Buttolph, M. D., Essex Co., N. J.; E. C. Booth, M. D., Morris Plains, N. J.; John W. Ward, M. D., Trenton, N. J.; S. Preston Jones, M. D., Merchantville, N. J.; John B. Chapin, M. D., Philadelphia, Penn'a; John C. Hall, M. D., Frankford, Philadelphia, Penn'a; W. Phillips, M. D., Kellyville, Delaware Co., Penn'a; J. C. Gerhard, M. D., Harrisburg, Penn'a; S. S. Schultz, M. D., Danville, Penn'a; H. A. Hutchinson, M. D., Dixmont, Penn'a; R. H. Chase, M. D., Norristown, Penn'a; John Curwen, M. D., Warren, Penn'a; W. H. Stokes, M. D., Baltimore, Maryland; R. Gundry, M. D., Catonsville, Maryland; W. W. Godding, M. D., Washington, D. C.; J. D. Moncure, M. D., Williamsburg, Virginia; R. Barksdale, M. D., Petersburg, Virginia; D. B. Conrad, M. D., Staunton, Virginia; H. Black, M. D., Marion, Virginia; W. J. Bland, M. D., Weston, West Virginia; Eugene Grissom, M. D., Raleigh, N. C.; J. D. Roberts, M. D., Durham, N. C.; J. F. Miller, M. D., Goldsboro, N. C.; P. L. Murphy, M. D., Morganton, N. C.; P. E. Griffin, M. D., Columbia, S. C.; T. O. Powell, M. D., Milledgeville, Georgia; P. Bryce, M. D., Tuscaloosa, Alabama; T. J. Mitchell, M. D., Jackson, Miss.; C. A. Rice, Meridan, Miss.; J. Welsh Jones, M. D., Jackson, Louisiana; J. S. Dorset, M. D., Austin, Texas; D. R. Wallace, M. D., Terrell, Texas; P. O. Hooper, M. D., Little Rock, Arkansas; J. H. Callender, M. D., Nashville, Tenn.; Michael Campbell, M. D., Knoxville, Tenn.; Wm. P. Jones, M. D., Nashville, Tenn.; Wm. A. Cheatham, M. D., Nashville, Tenn.; F. H. Clarke, M. D., Lexington, Kentucky; James Rodman, M. D., Hopkinsville, Kentucky; H. K. Pusey, M. D., Anchorage, Kentucky; O. Everts, M. D., College Hill, Ohio; C. A. Miller, M. D., Longview Asylum, Carthage, Ohio; C. W. King, M. D., Dayton, Ohio; C. M. Finch, M. D., Columbus, Ohio; A. B. Richardson, M. D., Athens, Ohio; J. Strong, M. D., Cleveland, Ohio; H. A. Tobey, M. D., Toledo, Ohio; G. F. Cook, M. D., Oxford, Ohio; George C. Palmer, M. D., Kalamazoo, Michigan; H. M. Hurd, M. D., Pontiac, Michigan; James D. Munson, M. D., Traverse City, Michigan; O. H. Long, M. D., Ionia, Michigan; E. O. Bennett, M. D.,

Wayne Michigan; J. G. Johnson, M. D., Dearborn, Michigan; E. H. Vandusen, M. D., Kalamazoo, Michigan; T. J. Gallagher, M. D., Indianapolis, Indiana; H. F. Carriel, M. D., Jacksonville, Illinois; Edwin A. Kilbourne, M. D., Elgin, Illinois; H. Wardner, M. D., Anna, Illinois; R. J. Patterson, M. D., Batavia, Illinois; Andrew McFarland, M. D., Jacksonville, Illinois; Richard Dewey, M. D., Kankakee, Illinois; S. B. Buckmaster, M. D., Mendota, Wisconsin; C. E. Booth, M. D., Winnebago, Wisconsin; H. A. Gilman, M. D., Mt. Pleasant, Iowa; G. H. Hill, M. D., Independence, Iowa; C. K. Bartlett, M. D., St. Peter, Minn.; J. E. Bowers, M. D., Rochester, Minn.; W. R. Rodes, M. D., Fulton, Missouri; R. E. Smith, M. D., St. Joseph, Missouri; Charles H. Hughes, M. D., St. Louis, Missouri; C. W. Stevens, M. D., St. Louis, Missouri; J. K. Bauduy, M. D., St. Louis, Missouri; A. H. Knapp, M. D., Ossawatimie, Kansas; B. D. Eastman, M. D., Topeka, Kansas; W. M. Smith, M. D., Asylum, Nebraska; James F. Cravens, M. D., Yankton, Dakota; O. Wellington Archibald, M. D., Jamestown, Dakota; B. R. Thombs, M. D., Pueblo, Colorado; W. H. Mays, M. D., Stockton, California; E. T. Wilkins, M. D., Napa, California; A. Clark, M. D., Stockton, California; S. E. Josephi, M. D., Salem, Oregon; S. Bishop, M. D., Reno, Nevada; J. W. Waughop, M. D., Fort Steilacoom, Washington Territory; H. H. Stabb, M. D., St. Johns, Newfoundland; Edward S. Blanchard, M. D., Charlottetown, Prince Edward Island; J. T. Steeves, M. D., St. John, New Brunswick; A. P. Reed, M. D., Halifax, Nova Scotia; C. K. Clarke, M. D., Kingston, Ontario; Daniel Clark, M. D., Toronto, Ontario; Joseph Workman, M. D., Toronto, Ontario; R. M. Bucke, M. D., London, Ontario; James Russell, M. D., Hamilton, Ontario; Stephen Lett, M. D., Guelph, Ontario. HONORARY MEMBERS.—J. S. Clouston, M. D., Scotland; J. G. Bucknill, M. D., F. R. S., England; D. Hack Tuke, M. D., L. L. D., England; C. Lockhart Robertson, M. D., England; A. Motet, M. D., France; A. Tamburini, M. D., Italy; Theo. Meynert, M. D., Vienna; Foster Pratt, M. D., Michigan; Stephen Smith, M. D., New York.

Noises and the Nerves.—In this bustling civilization of ours, there is a legion of needless noises that rasp our sensitive nerves from day to day, and produce a waste of vital energy.

The believer in the law of the survival of the fittest might suppose that the civilized man would grow insensitive to unpleasant noises, and yet the opposite seems to be the fact in this case. There is an increasing tendency to the aggregation of men in cities, and the activities of city life fill the air with their chaos of discordant sounds, and still human nerves, in place of being toughened become more and more sensitive.

The noises that are incident to modern city life are to a certain extent injurious to health. It is a common belief that noises that we do not consciously notice are not injurious, but this is an error. Noises that are so

often repeated that we do not notice them, may nevertheless be injurious and irritate and exhaust the nervous system.

Imagine how monotonous and exhausting it would be to live for years in a continuous thunder-storm, and yet, in a modified way, this is what a resident of the business part of a city does. Let anyone stand at an open window in a large city and make the test.

A few years ago a number of gentlemen in London, among them Charles Dickens, petitioned Parliament to restrict organ-grinding and other needless noises, and in this country a number of successful suits have been brought within the past few years, to restrain churches from the too frequent ringing of bells.

If noises are injurious to the healthy, how much more must they affect the sick, who are sensitive and weak. The click of hammers, the rattle of vehicles, the noise of hand-organs, the dull, monotonous hum of traffic—what exquisite and exhausting torture to the sick, with feeble nerves and fevered brain. The wonder is that persons recover under such conditions, and there are doubtless, many cases in which the noises of the street have helped to determine a fatal issue.

This is a subject which deeply concerns every medical man in the large cities, for it undoubtedly affects the results of treatment. We do not suggest any remedy, though there are many noises that are wholly needless, and ought to be suppressed.

We wish, however, to call attention of medical men to the matter as concerning the welfare of their patients, and their own professional success.

J. H. M.

Operations for Abscess in the Brain.—

At a meeting of the Medical Society of London, March 5, 1888, Dr. Ferrier and Mr. Victor Horsley read the notes of a case of cerebral abscess, associated with a discharge from the ear, in which Dr. Ferrier diagnosed the presence of an abscess in the brain, and Mr. Horsley operated successfully for its evacuation. As there are but few such cases on record, this one is of peculiar interest. The patient was a man, 47 years old, who had been ill since November 10, 1887, and on the fifteenth had had an offensive discharge from the left ear. On December 8, when Dr. Ferrier first saw him, he was drowsy, and complained of pain on the left side of the head. He had no paralysis. His pulse was 52, weak and intermittent. His respirations were 14 to the minute, labored and sighing. His temperature was normal. After a temporary improvement, he was at the end of six days more drowsy, and in a few days more he developed some delirium

and confusion in his speech. There was also some weakness of the right angle of the mouth.

On studying these symptoms Dr. Ferrier came to the conclusion that the man had an abscess of the brain, probably situated in the anterior part of the third left temporo-sphenoidal lobe, and abutting or pressing upon the fissure of Sylvius. Mr. Horsley agreed in this diagnosis, and, on December 9, he operated by trephining the skull, opening the dura mater, and puncturing the brain with a trocar. The result was the evacuation of about five fluid drachms of odorless pus. After this the patient went on uninterruptedly to recovery.

In commenting on this case Dr. Hughlings Jackson described the result as simply magnificent, and other members of the Society joined in his admiration of the acumen and skill displayed by Dr. Ferrier and Mr. Horsley. Similar feelings must be excited in the minds of all who learn its details; and no one can doubt that to these men the patient owes his escape from impending death.—*Medical and Surgical Reporter*.

With the development of the cerebral localization into an exact science and anticepsis in surgical procedures, craniotomy and cephalo-puncture have become remedial resources of much greater therapeutic value and certainty than formerly, and Mr. Victor Horsley is certainly utilizing the discovery of Ferrier, and the method of Lister.

Operations on the brain are not novelties in practice, but the exact location of tumors and abscesses, and their removal by the trephine, the knife and trocar, is new in diagnosis, and Horsley has made his name, and that of English surgery once more conspicuous. "To the Victor belongs the spoil" and the honors.

In this connection we may turn with pleasure to the recent illustration we have had of the utility of operations on the cranium for cerebral abscess, in the case of Mr. Conklin, in the hands of Doctors Barker, Agnew and Sands.

Food for Infants, Dyspeptics and Nervous Invalids.—No infants' foods appear in our advertising pages, and we give in lieu of them, a valuable therapeutic secret. The secret is in Merck's Dry Malt Extract. It is the basis of most valuable infants' food, and is better in our judgment than either Mellen's or Liebig's, and more than an equivalent for either or any of those with which we are acquainted, mixed freely, with milk or cream, and taken as food. We have fed and fattened hemiplegics and other paralytics upon it, and seen neuropathics and neurasthenic and neuratrophic dyspeptics

thrive on it. Try the dry malt for your babies, gentlemen neurologists, and get Merck's. We have used it for fifteen years. It was never advertised in our pages, but we commend it all the same.

There is another malt extract which answers quite as well and has the advantage of useful combinations, and being made in the U. S., is cheapest, and that is Trommer's Extract.

Trommer's Malt Extract is quite as well known to us as Merck's, and perhaps, from a business stand-point, we should say it is better, but it is not in our professional judgment, save in being more condensed, less expensive, and therapeutically combined. Its greater sweetness and semi-solid form is an objection with some patients, just as the powdered form of Merck's Dry Malt Extract is with others.

But we should like to have our infant food people explain wherein their food is superior to or different from these malt extracts. We know the composition of these malt extracts. We think we know wherein the virtue of these foods exists. If they contain virtues other than that imparted by the malt extract they contain, an explanation and demonstration would be of professional interest and value to the adults as well as the babies of our country.

Personal Mention—Dr. Wm. B. May.—Among the most agreeable incidents of our recent tour through California and the extreme Western and Southwestern States and Territories, after parting with our hospitable and accomplished friend Thombs, of the Pueblo Colorado Asylum, was the meeting of Dr. Wm. B. May, of 1114 Clay Street, San Francisco, the gentlemanly and genial traveling agent of the Southern Pacific Railroad Company, who accompanied the train through Southern California, Arizona and New Mexico, and gave us many attentions and courtesies and much information invaluable to the tourist. So far as we know no other railroad on the Pacific Coast and adjacent territory roads has such an officer, and we have made two tours of this region on other roads. Tourists who may have the good fortune to meet Dr. May will find him full of valuable information, ever ready to communicate the same and to assist the stranger over the Southern Pacific routes in many ways, to their comfort and pleasure.

Grave Self-Mutilation and Its Significance.—

Self-mutilation, in minor or grave degree, is not an uncommon symptom among the mentally aberrated and the victims of psychical perversion in certain forms of nervous agitation. In melancholia agitata and other insanities with agitation, especially slight degrees of self-mutilation, such as picking the skin into sores, plucking the hair and eyelashes, biting off the nails, etc., is quite a common symptom. The act is a symptomatic expression of simple automatic agitation usually, and it is sometimes, though very rarely, the perverted volitional display of definite delusional impulse. The grave mutilations, however, such as compromise organs of sense, or motion, or life, always have had, in our observation, a delusional basis, and been the product of definitely insane psychical perversion. They have been done for a purpose and from a cause, though both have been irrational. The self-castrations and genital mutilations in the male that have come under our observation (in the female insane we have seen only mischievous and apparently purposeless vaginal obstructions with pins, pebbles, spools, plaster, thimbles, etc.) have been morbidly-directed, delusion-inspired volitional acts.

Perhaps every insane asylum of three hundred or more mingled acute or chronic insane will contain one instance or more of grave mutilation, attempted or accomplished as the offspring of delusion. Insane Scriptural perversions are commonly the deranged mental cause, especially where the eyes or genitals are destroyed, or their destruction attempted. "If thine eye offend thee, pluck it out," etc.; or, "If thy right hand offend thee, cut it off," etc., are passages of Scripture most frequently pervertedly interpreted by the insane mind, especially among the naturally pure, who, becoming weakened in their cerebro-spino-neural mechanism, become a prey to the predominance of lascivious thoughts and acts. The hand, strange to say, is seldom cut off, while testicles are often strangulated or destroyed, or eyes gouged out.

The most notable feature of the most of these cases, if closely inquired into, is the interchangeability of perverted religious emotional with morbidly erotic feelings, showing in one of many ways what has long been known to psychiatric clinicians, the close connection between aberrations of the genesic sense and religious emotional insanity.

A case like this has probably happened in the obser-

vation of every experienced asylum superintendent: An irregularly educated preacher, ordained to preach but not disciplined to study in his youth, becomes afflicted with insomnia, loses appetite and flesh, considers that he is fasting and depriving himself of sleep for the glory of the Lord, begins to preach strange doctrines and to talk in strange tongues. As he becomes more unearthly and more saintly in imagination, he becomes ready to crucify, not the lusts of the flesh, but the flesh itself. Such an one settles the conflict of the passions by strangulating his testicles with his suspender.

Another, a younger man, reads his Bible much, works a little to supply his necessities, wanders about the country as a solitary tramp, meditates and masturbates. Securing employment in one of the villages of the State, he falls into desperate, hopeless love, with the daughter of his landlady. The religious, emotional and the erotic emotional struggles begin and go on in the solitude of his chamber and in the quiet of the woods, and continue while he works. This moral conflict with the resulting abstraction leads to the loss of his employment. He leaves the village, the girl whose charms have smitten him, and his work, and wanders again alone along the road, to moralize and to masturbate. He reasons that if his eyes had not dwelt upon the beauty of this girl, he had not been guilty of the vicious indulgence which takes away his strength and gives remorse. He reads, "If thine eye offend thee, pluck it out;" and in the solitude of his lonely tramp he stops by the road side, and with two sharp, flat stones, scoops out both eyes and casts them away. A feeling of satisfaction comes to this insanely tormented spirit, and when found a short time after and brought to the asylum, neither remorse, nor regret, nor self-censure escape him. On the contrary, he is well pleased that the Scriptural injunction has been literally fulfilled, though he is to go through the remainder of his life thus irreparably maimed.

We never, during many months after this tragedy, heard this patient express a regret that he had committed this deed of self-mutilation. This is the case of Y., whose name appears in the records of the Missouri State Lunatic Asylum, for 1867. The other is that of S. This kind and degree of self-mutilation is at least *prima facie* evidence of insanity, and so was the record and category of the following case of self-enucleation of both

eyeballs, reported by Fulton in the *American Journal of Ophthalmology*, for July, 1887.

The man, aged thirty-eight, while on a prolonged debauch, tore both eyeballs from their sockets and left them hanging loose in the conjunctival sac. When found, the cornea of each eye had begun to slough. The lids were contracted behind the eyeballs. The conjunctivæ were swollen, thickened and infiltrated. The patient had simultaneously thrust a thumb into the external canthus of each eye and gouged out the eyeballs. The recti muscles were all torn loose, and the optic nerves torn off close to the commissure.

Talmage on Spiritualism and Insanity.—

The last sermon preached by Rev. T. DeWitt Talmage was on Modern Spiritualism, with Saul and the Witch of Endor for a text.

The divine's idea in that sermon seems to have ran altogether in the neurological groove.

The Brooklyn divine is as neurologically and psychologically orthodox on the subject of the salvation of the nervous system as he is on that of the salvation of souls. Here is, in part, what he said:

A Cause of Insanity—There is not an asylum between Bangor and San Francisco which has not the * * * victims of this delusion. Go into any asylum—I care not where it is—and the presiding doctor, after you have asked him, "What is the matter with that man?" will say, "Spiritualism demented him;" or, "What is the matter with that woman?" he will say, "Spiritualism demented her." It has taken down some of the brightest intellects. It swept off into mental midnight judges, senators, governors, ministers of the Gospel, and one time came near capturing one of the presidents of the United States. At Flushing, near this city, a man became absorbed with it, forsook his family, took his only \$15,000, surrendered them to a spiritual medium in New York, attempted three times to put an end to his own life, and then was incarcerated in the State Lunatic Asylum, where he is to-day a raving maniac. Put your hand in the hand of this Witch of Endor, and she will lead you to bottomless perdition, where she holds her everlasting séance.

Many years ago the steamer *Atlantic* started from Europe to the United States. Getting mid-ocean the machinery broke, and she floundered around day after day, and week after week, and for a whole month after she was due people wondered, and finally gave her up. There was great anguish in the cities, for there were many who had friends aboard that vessel. Some of the women, in their distress, went to the spiritual mediums and inquired as to the fate of that vessel. The mediums called up the spirits, and the rappings on the table indicated the steamship lost, with all on board. Women went raving mad and were carried to the

lunatic asylum. After a while one day a gun was heard off Quarantine. The flags went up on the shipping and the bells of the churches were rung. The boys ran through the streets crying, "Extra! the Atlantic is safe!" There was the embracing as from the dead, when friends came again to friends; but some of those passengers went up to find their wives in the lunatic asylum, where this cheat of infernal spiritualism had put them.

A man in Bellevue Hospital, dying from wounds made by his own hands, was asked *why* he tried to commit suicide, and he said, "The spirits told me to!" Parents have strangled their children, and when asked *why* they did it, replied, "Spiritualism demanded it!" It is the patronizer and forager for the mad-house. Judge Edmonds, in Broadway Tabernacle, New York, delivering a lecture in favor of spiritualism, admitted, in so many words:

"There is a fascination about consultation with the spirits of the dead that has a tendency to lead people off from their right judgment, and to instill into them a fanaticism that is revolting to the natural mind."

It not only ruins its disciples, but it ruins the mediums also, only give it time. The Gadarean swine, on the banks of the Lake of Galilee, no sooner became spiritual mediums than down they went, in an avalanche of pork, to the consternation of all the herdsmen. The office of a medium is bad for a man, bad for a woman, bad for a beast.

I never knew a confirmed spiritualist who had a healthy nervous system. It is incipient epilepsy and catalepsy. Destroy your nervous system, and you might as well be dead. I have noticed that people who are hearing raps from the future world have but little strength left to bear the hard raps of this world. It is an awful thing to trifle with one's nervous system. It is so delicate—it is so far-reaching—its derangements are so terrible. Get the nervous system a-jangle, and so far as your body and soul are concerned, the whole universe is a-jangle. Better in our ignorance experiment with a chemist's retort that may smite us dead, or with an engineer's steam boiler that may blow us to atoms, than experiment with the nervous system. A man can live with only one lung or with no eyes and be happy, as men have been under such afflictions; but woe to the man whose nerves are shattered. Spiritualism smites first of all, and mightily, against the nervous system, and so makes life miserable.

The superintendents of American and foreign asylums for the insane will bear out this theologian's statement—that spiritualism makes many lunatics, and the counter statement—that lunacy makes spiritualists. Barring a little overdrawn rhetoric and pulpit latitude—a little too latitudinous for scientific accuracy—all alienists must concede from observation, the truth of Dr. Talmage's assertion, that spiritualism has destroyed some of the brightest intellects.

Tasteless Cascara.—A valuable contribution to the knowledge of the chemical constitution of *Cascara sagrada*

appeared in the *Amer. Jour. of Pharmacy*, for February, 1888, which makes it possible not only to obtain a true interpretation of the various clinical observations, but clears up apparent anomalies and also indicates the reasons for observed effects, which have lately been disputed, but now admit of no further question or misunderstanding.

Among the discoveries referred to in this paper, of especial interest to the physician, is the influence of a class of vegetable ferments and their recognition as the causes of various abnormal conditions, such as colic, vomiting, nausea, diarrhea and dysentery which occasionally attend the administration of certain drugs.

It appears that Frangula bark, when fresh, contains such a ferment in excessive quantities and is, therefore, unfit for use until the ferment has exhausted itself—the process usually occupying several years. It also appears that Cascara contains some of this principle, and this fact will account for the occasional untoward effects of the drug, which have been observed as consequent on the employment of a number of its preparations heretofore in the market. These effects are, therefore, not due, as has been supposed, to any idiosyncrasy on the part of the patient, or to the laxative or tonic constituents of the bark itself, but to a distinct objectionable principle, which once recognized, can be rendered inoperative and harmless.

Parke, Davis & Co. were the first to clearly recognize the principles involved, and to formulate and adopt correct pharmaceutical processes and thus overcome all the difficulties heretofore existing. As a result of their investigations, they now offer to the medical profession a fluid extract, a solid extract and also a concentration, all of which (designated as "Formula of 1887") exhibit only the desirable laxative and tonic properties, and being free from this ferment, are incapable of producing griping, nausea or any of the mal effects above enumerated.

The physiological tests now being conducted at the laboratory of Parke, Davis & Co., with the different principles contained in the plant, seem to demonstrate the superiority of Cascara itself, to its former supposed competitor, Frangula, as a laxative.

American Medical Association.—

The approaching annual meeting of the American Medical Association, May 8th to 11th, at Cincinnati. The profession there are making preparations in anticipation of one of the largest meetings in the history of the body. The citizens, too, feel gratefully the honor which is in store for

them in this great gathering of the representative men of the country, and can be depended on to furnish entertainment of a social nature which will be quite in keeping.

* * * * *

They have the impression that doctors are not the dry-as-chip specimens of humanity whom they are in the habit of encountering when other bodies of scientists swoop down upon their fair city in annual convention, and they have, we are given to infer, taken steps to provide such entertainment as gratifies the human element in the man. This is just as it should be, and it is hoped that the occasion will prove that all the (jaw) bones of contention, and hatchets, and the other disagreeable weapons of attack and defence (sneers, inuendoes, etc.), which have been so conspicuous during the past three or four years, have been buried so deep under the success of the late International Medical Congress, as to be forever beyond the power of resurrection. Let us have peace.

* * * * *

The times are auspicious for a grand reunion at Cincinnati next May, and if the proper growth of the spirit of "meet-me-half-way" shall be cultivated in the meantime, the meeting will be a memorable one.

* * * * *

The sensible broad-minded men of the profession will, under the circumstances, reunite, and letting the dead past bury its dead, will go to the next meeting with a fixed resolve to join forces for the common good.

The above, from the *Medical Age*, expresses our sentiments.

Medical Experts.—A Sound View.—

Mr. Clark Bell, in the *Medico-Legal Journal*, makes the following clear-headed comments on this subject. They are in accord with the demands and truth of science, and especially with the views of all experienced alienists, led by the great Esquirol, who long ago said we must live with the insane to understand them:

We feel that there is a precipitous impulse in young ambition towards the notoriety of appearing as an "expert" in some legal case, where the disposal of human life or fortune may hang upon our very lips. Nothing could be more unfortunate for the moral welfare, and professional standing of a man, than that he should allow himself, on the strength of mere average information, to be induced to deliver a medical opinion in a case requiring special research, observation and clinical experience. It is so manifestly wrong, that to be the purveyor of "expert testimony" ought rather to be shunned than sought by young practitioners.

Doubtless, there are honest men of meagre attainments, who are quite deceived as to their own ability to give expert testimony. This is deplorable, but a fault which it is hard to correct, though the best safeguards of ignorance in medical jurisprudence, lie to a certain extent within the reach of all.

* * * * *

He seeks, for example, to settle the question of mental responsibility. In such a case, let him beware of the jurisprudence that is to offset his medicine. If he dread rebuke and ignominy; above all, if he be a conscientious man, let him never presume to know more than he does know. A shrewd cross-question will certainly undo him, and he runs a risk of fatal inaccuracy which may involve tremendous results.

Reflex Crazes.—The *Medical Standard* says:

The tendency to magnify their office was long confined to the gynecologists, whose reflex notions were a witch's broom, on which more than one theorist rode his patients to destruction. The rectal specialists next were seized by this "reflex fever," and now it has attacked the ophthalmologists. Of the reflex notions—pure and simple—of the ophthalmologists, but little need be said, since it was a craze based on a few truths and a large amount of "facts" * * * * *. The craze will soon die out, and criticism is hardly needed to destroy its evil effects. The latest "fad" of the ophthalmologists is a very dangerous one. They claim that albuminuric retinitis can be determined with such certainty as to form an indication for abortion as a prophylaxis against eclampsia, or serious eye diseases. * * * * *. Such opinions as these * * * should be advanced only on the strongest proof. The truth is, as Dr. R. A. Murray, of New York, has said (*Medical Standard*, March), the eye changes found have not the serious significance assigned them. Few patients with albuminuria have eclampsia, and fewer still severe eye diseases.

The *Medical Standard*, besides the meritorious character of its articles, is a perfect epitome of medical personal news and gossip. We should like to know how the *Standard* manages to get so much knowledge of men and things in the medical world, if it is not a professional secret not to be disclosed. The unseen hands that hold up the *Standard* evidently are upheld by brains and energy.

The Meeting of the Superintendents of American Hospitals for the Insane.—The success of the meeting of the Association on the 15th of May, at Old Point Comfort, Va., we are informed by the Committee of Arrangements, is assured, at least so far as papers are concerned. A printed programme of each day's proceedings will be issued when all the arrangements are completed.

A general interest is expressed in the report on the "Propositions," which will be by Drs. Evarts, Bancroft, Bryce, Kilbourne, Stearns, Draper and Patterson, who have all expressed themselves strongly in writing, and if able to be present will take part in its discussion.

The Nestor of our specialty, Dr. John S. Butler, writes

enthusiastically in the hope that the "Individualized Treatment of Insanity" will be adopted as a principle.

The other survivor of the "Original Thirteen," the venerable Dr. Pliny Earle, writes warmly, and leaves us not without hope of a paper from him on the "Propositions."

Not Strictly Neurological.—*The Congress of American Physicians, Surgeons and Specialists*, will be held in Washington on September 18th, 19th and 20th. Discussion will take place on the following subjects: 1. "Intestinal Obstruction in its Medical and Surgical Relations." 2. "Cerebral Localization in its Practical Relations."

Professors Erb of Heidelberg and Liebermeister of Tübingen are mentioned as candidates for the directorship of the Leipzig Medical Klinik, vacant by the death of Prof. Wagner. Erb is especially known from his contributions to Neurology and Liebermeister to Fever and its Treatment. By the death of Ernst Wagner Germany has lost one of her best-known physicians and the University of Leipzig one of its most distinguished professors. He died of nephritis, at the comparatively early age of fifty-nine.

The Curability of Insanity and the Individualized Treatment of the Insane.—Dr. J. S. Butler urges that insane persons should be dealt with individually rather than in a general way, in order to effect a cure. That is, the physician should study each case with the same close interest and professional zeal which he would feel were the subject ill with a rare and complicated disease. This involves the grouping fewer patients together than often is customary. Dr. Butler also emphasizes the beneficent value of moral means of influence, and relates many instances of their successful use.

The Superiority of Fairchild Bros. & Foster's Pepsine.—We note with pleasure the high foreign as well as home commendations this deservedly popular pepsine is receiving. The opinion lately expressed in London by Dr. Murrell only confirms the testimony of our own long and satisfactory experience. We have found no other pepsine, scale or saccharated, equal to it.

The McIntosh and Faradic Galvanic Battery.—This is the most practical and convenient combined battery with which we are familiar. It is portable, clean and efficient.

Thanks.—We cordially thank Dr. J. E. Harper, of that sprightly journal the *Western Medical Reporter*, for its spontaneous expression of pleasure at the success of the ALIENIST AND NEUROLOGIST; and also that new and spirited quarterly, edited by Dr. I. A. Loveland, the *Review of Narcotic Inebriety*, for its kindly and complimentary reference to the child of our brain, that has visited you, dear reader, during nearly all of the years of the last decade.

Though the ALIENIST AND NEUROLOGIST is able to paddle its own canoe, the ripple of the waters as it moves along in its self-propelled course, sounds sweeter when the winds waft from the shore the cheering voices of friends.

The spirit that moves these kindly contemporaries to say good words of cheer when they might have cast stones at some of the many journalistic weaknesses of which we are neither innocent nor insensible, is duly appreciated.

Our *confrères* journalistic have our thanks and reciprocal good-will and esteem.

The Thermotaxic Heat-Centers.—European writers seem averse to acknowledging the fact that some of the best experimental work in connection with the subject of fever has been done in this country by Wood, Ott and their pupils and assistants. In particular, the credit of localizing the heat-centers in the nervous system is due to Dr. Ott, though Sachs and Aronsohn independently made similar discoveries later. Girard and Baginsky have also made original observations and experiments regarding this subject, confirming the view that there are heat-centers in the brain and cord. The facts regarding the cerebral heat-centers are summarized in a paper by Drs. Ott and Carter in the *Therapeutic Gazette* for September, 1887.—*N. Y. Med. Rec.*

Alternation of the Neuroses, with Rheumatism, Gout and Diabetes.—George H. Savage (*Journal of Mental Science*, January, 1887) calls attention to the fact that rheumatism, gout and diabetes often alternate with the neuroses. This relationship was known to the older alienists. Griesinger calls attention to it. Kiernan, Hughes, Madigan and DeWolf have pointed it out in the United States. In all probability, gout, rheumatism and diabetes are trophoneurotic conditions, hence the alternation.

Index Medicus.—Are you a medical scholar, and do you subscribe for the *Index Medicus*? If you are and do not, you ought to. It is your best friend. It will save you time, labor and money. It is worthy of your support for the return it will give you in ready-references, and as a national enterprise of which every American physician should be proud. There is nothing like it elsewhere under the sun.

Memphis Medical Monthly.—This is the changed name of our valued exchange heretofore known as the *Mississippi Valley Medical Monthly*. Drs. Sim and Neeley will continue its editors.

Liebig's Extract of Meat Company.—This company (9 Fenchurch Avenue, London, E. C.) send us some excellent samples of their Meat Extract, for which we return thanks.

The Increase of Insanity in New York.—Letter from Dr. Granger, of the Buffalo State Asylum for the Insane:

BUFFALO, N. Y., March 1st, 1888.

DEAR DR. HUGHES:

Allow me to thank you for your very pleasant and good review of my paper on "The Increase of the Insane," etc. But one important fact, on this increase, you failed to state, though you referred to it—that is, the increase of insanity, as cared for in the asylums of the State, is greater than the proportionate increase of the population of the State. In 1870 there was one insane person in the various asylums of the State, to every 779 in the population; in 1880, one in every 532, and in 1886, one in every 406.

It is reasonably safe to say that this increase will continue until one in less than every 400 of the population will be in an insane asylum. I think that these facts, showing the rapid increase of the insane, were the most startling of any that came to me while studying into the subject.

Truly yours, WM. D. GRANGER.

The National Druggist, of St. Louis, Mo., is to be congratulated in having secured the services of Frank L. James, Ph. D., M. D., as editor. He remains also editor of the *Medical and Surgical Journal*, of the same city. Dr. James is a fluent and an able writer, and his influence, added to that which the *National Druggist* had already secured, will make it a still more useful journal.

IN MEMORIAM.

WILLIAM BENJAMIN GOLDSMITH.—We are sorely grieved that we have to announce the unexpected and premature demise of our young, talented and faithful colleague in psychiatry, the but recent successor of the late lamented Doctor Sawyer to the superintendency of Butler Hospital.

Doctor William Benjamin Goldsmith is dead. His active labors at the hospital ceased on the fourteenth of March, and he died of the pneumonia which then prostrated him within seven days thereafter.

Following is the sad record and memorial tribute of the Trustees of the Butler Hospital for the Insane, made on Thursday, April 5th, 1888, and ordered to be entered in the Records, and to be published: "William Benjamin Goldsmith, M. D., Superintendent of the Butler Hospital for the Insane, died of pneumonia after an illness of seven days, on Wednesday, March 21, 1888, at the age of thirty-four years, two months and ten days. He was born in Bellona, Yates County, N. Y., January 11, 1854, and was the son of the late Rev. Benjamin M. Goldsmith. He was educated at Amherst College, where he graduated in 1874. He immediately began the study of medicine, with special reference to the treatment of mental disease, and spent a year under the guidance of Dr. John Chapin, of the Willard Asylum. The two following years he was a member of the College of Physicians and Surgeons in New York, where he received his degree as Doctor of Medicine, in 1877, and was soon appointed Second Assistant Physician in the Bloomingdale Hospital for the Insane, of which Dr. Chas. H. Nichols is the distinguished head. At the end of a service of two and a half years, he went to Europe and carried forward his professional studies amidst great advantages in, well known hospitals in London and Edinburgh; in the latter city also as temporary assistant to Doctor Clouston, of the Royal Asylum. While absent, he was appointed First Assistant Physician on the staff of Dr. Nichols, of the Bloomingdale Hospital, and had been but a few months in this position when he was invited to become Superintendent of the State Hospital for the Insane at Danvers, Mass. While charged with

the duties of this office, he was permitted to spend nearly a year in Germany, for special professional studies.

"Such had been the training and experience of Dr. Goldsmith when he was chosen by the Trustees of the Butler Hospital to become its Superintendent, on the death of the late Dr. John W. Sawyer. He entered upon his duties here on the first day of February, 1886, and at the time of his death had discharged them with rare professional skill, with unremitting assiduity, and with singular success, for the period of two years and nearly two months. In this brief period, he has left upon the administration and interests of the Hospital the impress of thorough and varied professional knowledge, of sound judgment, of great humanity and tenderness and of the highest qualities of educated manhood. His manners were reserved, but they always revealed a refined and gentle nature which did not fail to secure the confidence and esteem of those with whom he was associated. As a Superintendent, he was fulfilling the high expectations with which his appointment had been made. His treatment of the patients under his charge was in accordance with the liberal and progressive methods now most approved, and it has been attended with important results. Nor was his success confined to professional matters alone. In the management of all the interests of the Hospital, in the development of its grounds, in the cultivation of its farm and in the improvement of its buildings, he has shown only good judgment and skill. And the Trustees record, with special satisfaction, the advantages they have derived from his wise counsel, his varied experience and his architectural taste in the planning and erection of the new ward now in progress of construction as a memorial of the late Dr. Sawyer, his predecessor. He has been taken from us at a moment most unexpected, just as he had fully shown how ample were his qualifications for the position which he held, and how full of promise was the future that was opening before him."

REVIEWS, BOOK NOTICES, &c.

“PROGRESSIVE MUSCULAR ATROPHY BEGINNING IN THE LEGS.” By J. B. Marvin, M. D., Professor Principles and Practice of Medicine and Clinical Medicine in the Kentucky School of Medicine. Reprint. *American Practitioner and News*. July 24, 1886. Read before Kentucky Medical Society, etc.

Progressive muscular atrophy, as the author correctly records, is one of the most chronic and incurable of all spinal affections. Typical forms of the disease commencing in the upper extremities, causing gradual wasting, usually of the small muscles of the hand, is dependent of local lesion or primary functional inactivity, are comparatively common, and are readily recognized by anyone making any pretence to skill in diagnosis. But the case reported by Dr. Marvin, is an exceedingly rare form. We remember having seen no such case—though we are seldom without at least one case under clinical observation—where the symptoms have begun or are confined to hand, arm or shoulder. (See p. 8.)

“Duchenne saw it only twice in 159 cases; Roberts five times in 62 cases; Friederich, twenty-seven times in 146 cases.”

Dr. Marvin's Case Record is as follows, beginning March 26, 1886:

Mr. M. is a farmer, æt 28, strongly-built, florid complexioned, 6 feet high, weighing 169 pounds. Healthy as a child and youth; no inherited disease; is temperate; both parents healthy; brothers and sisters healthy. No member of his family has any nervous disease or is affected as himself. At about twenty years of age, he had dysentery, followed, not long after, by a sunstroke. Loss of appetite, a feeling of exhaustion, and general weakness prevented him from doing his accustomed farm-work for two or three weeks. There were no special head symptoms or loss of power in the extremities. There was no time during this attack when he could not stand or walk. Some time after this, he cannot fix date, he noticed awkwardness in his legs, especially when he tried to run or jump. This gradually increased, and he lost the “spring of his feet,” and found it difficult to raise his heels and stand on his toes. He never experienced any pain or abnormal sensation in his back or legs. He noticed the calves of his legs were very small; he cannot tell when the wasting of these muscles began, nor in which leg the wasting started, or whether it appeared simultaneously in both legs. He continued his farm-work until about two years ago, when he noticed he was more easily fatigued, and work caused a weak, tired sensation in the lumbar region and in his legs. He consulted a physician, and quit work for four months, when, not experiencing any benefit, he ceased treatment and returned to his work.

Last summer he worked in the harvest field. He says it aggravated all his symptoms. His hands are tremulous when tired, excited.

or embarrassed, and at these times he cannot write easily or smoothly. More recently he has noticed quiverings in the muscles of the thighs and hands, and occasionally has cramps in his fingers. He easily loses his balance, and stands with his feet apart, or one foot in advance of the other. He never has headache or vertigo. He can preserve his balance best when barefooted, or standing on a soft or yielding surface. On examination, I find no head symptoms whatever. Pupils are normal; he has a habit of squinting the right eye, and there is a slight occasional contraction of the orbicularis. His hands and arms are well developed; he is not conscious of the slightest loss of power or atrophy in them. When his arms are extended the hands become slightly tremulous, and slight fibrillary twitchings are seen in the muscles between the thumb and first finger of the right hand; also marked fibrillary contractions about the shoulders, especially in the left deltoid. His shoulders are slightly rounded. All the muscles of the upper extremities respond to the faradic current, and there is no apparent atrophy or loss of power. The interossei act well. The legs are very small, measuring, just above the ankles, 8 inches, at largest part of leg, $10\frac{3}{4}$ inches, just above the knee, $13\frac{1}{2}$ inches. The legs have lost their proper contour, are flattened posteriorly; the calf muscles of each leg are symmetrically atrophied *en masse*, the skin closely applied to the muscles. There are no fibrillary contractions below the knees. There are no sensory or trophic disturbances; no bladder, bowel, or sexual symptoms. The temperature of the legs is slightly lowered; and the patient has noticed increased sensitiveness to cold. The legs and feet perspire freely; the feet are held at right angles to the legs; the patient cannot raise his heels and depress his toes. The plantar reflex is diminished. The patellar reflex is well marked, stronger on the right than on the left leg. The gastrocnemii and solei give but the faintest suspicion of a response to the faradic current; there is no "reaction of degeneration," the anterior leg muscles and the intrinsic muscles of the feet respond to the faradic current more feebly than normal. Fibrillary contractions are marked in the thigh muscles and gluteal region, muscular contractility is exaggerated, tapping the tendon of the quadriceps causes widely diffused contractions of the thigh muscles, the thigh muscles respond normally to electricity. When the patient stands with his heels together, the thigh muscles become rigid, and there is marked depression on each side anteriorly over the insertion of the gluteus maximus. The patient is sway-backed; fibrillary twitching and slight atrophy are detected in the lumbar muscles. The patient has some difficulty in walking up steps. His gait is peculiar—the so-called loosely strung gait; ankle motion more defective than knee or hip action; the joints have never been painful, nor are they enlarged.

Such, with some liberty of abridgment and verbal modification, only for brevity, to suit, our space is the record.

Dr. Marvin further discusses this subject as follows:

When this rare form of the disease does occur, it differs from the typical form in that whole muscles or groups of muscles, rather than individual fibers and parts of muscles, undergo atrophy. While the

possible occurrence of this irregular form is generally admitted, recent authorities claim that most of these cases are not examples of true progressive atrophy. Eulenberg thinks this form occurs only in children, in a form allied to pseudo-hypertrophic paralysis.

Erb separates the juvenile hereditary forms from true progressive muscular atrophy; "they differ from it in localization and course, anatomical changes and clinical phenomena in the muscles, and alterations in the spinal cord." Bramwell and others claim that many of these cases are identical with chronic anterior poliomyelitis. From the history of this case, as detailed above, I do not think any one could claim it as an instance of pseudo-hypertrophic paralysis. Chronic anterior poliomyelitis, with which progressive muscular atrophy is most frequently confounded, is characterized by gradual motor paralysis, with subsequent rapid atrophy, abolished reflexes, reaction of degeneration; the muscles of the legs are first paralyzed, then those of the thigh and hip, and then in turn the upper extremities are involved, the extensor muscles of the fingers being first affected. The disease runs a comparatively rapid course, and generally terminates favorably. In the majority of cases improvement occurs after a stationary period, the paralysis and atrophy disappearing more or less completely, the muscles last affected being the first to recover. Though my case has many features in common with this description, I cannot persuade myself that it belongs under this head. The absence of distinct paralysis, the loss of motor power following atrophy and directly in proportion to the muscular wasting, the reflexes being retained, no reaction of degeneration, persistent fibrillary contractions, and the extremely slow, yet onward progress of the disease seem fatal to a diagnosis of chronic anterior poliomyelitis. It only remains to say a few words concerning the so-called juvenile progressive muscular atrophy of Erb. As described by this author, "There is slow, symmetrical but intermittent, and often stationary wasting and weakness of certain groups of muscles, preferably those encircling the shoulder and upper arm, the pelvis and upper thigh and back, an atrophy which is very frequently combined with true or false muscular hypertrophy, with a peculiar toughness of the atrophying muscles, but without fibrillary contraction or any trace of the reaction of degeneration or other lesion in the body, be it of the nervous system, organs of sense, vegetative organs, or external integuments." The disease begins in youth or childhood, and agrees in its symptomatology and in the anatomico-histological alterations of the muscles with pseudo-hypertrophic paralysis. The disease is eminently hereditary, not "infrequently it occurs in entire groups in one family, producing the so-called hereditary—better named, family—muscular atrophy." "If this form occurs after puberty it affects most frequently, although not exclusively, the upper half of the body."

The absence of heredity, the late development, and its long confinement to the legs, with eventual involvement of certain muscles of the thighs, lumbar region, and upper extremities with marked fibrillary contractions, seems to exclude my case from this category and justify the diagnosis of progressive muscular atrophy.

The doctor, as the lawyers say, has made his case, but no plea we think for the recognition of progressive muscular atrophy, because it happens to begin in the lower extremities is necessary, although Drs. Gowers, Ross, and others, would regard Dr. Marvin's cases as mistakes of diagnosis.

The probable reason why this disease most frequently begins in an upper extremity—a thumb, forearm, hips, or shoulder muscle of the right side preferably, is because the upper extremities are most used in complex movement.

Progressive muscular atrophy is a trophoneurosis, and as overstrain of the vasomotor mechanism has much to do with its development, it may fall first upon any muscle.

The history of sunstroke and dysentery, in this case, gives us an intimation of how such overstrain may be initiated.

THE PRESCRIPTION THERAPEUTICALLY, PHARMACEUTICALLY AND GRAMMATICALLY CONSIDERED. By Otto Wall, M. D., PH. D., Professor of *Materia Medica* and Botany in the St. Louis College of Pharmacy, Professor of Pharmacy in the Missouri Medical College, Member of the Committee of Revision of the Pharmacopœia of the United States, Etc.

An accurate knowledge of the construction of the prescription is essential to both physician and pharmacist. The prescription is the index of the physician's ability to apply his knowledge.

Correct prescription writing should be considered an essential part of the physician's education. The prescription is the courier that carries the physician's command to the pharmacist. It and the skillful druggist are the physician's *aides de camp* in the battle for human life.

This book is a *vade mecum* of inestimable value to both physician and pharmacist, who are not more than ordinarily well versed in practical prescription writing or prescription filling. It will help supply the deficiency of the additional year for pharmaceutical, which ought to be added to the curriculum of every school of medicine and pharmacy.

It contains the rules of the Latin language; rules for abbreviating, an explanation of weights and measures, including easy methods of acquiring the ability to write metric prescriptions; rules for general and special extemporaneous prescribing and determining doses for adults and children; rules in regard to combining remedies of similar and of different therapeutical or physiological actions; an explanation of incompatibles; statements of the influences of sex, age, climate, time of day, etc., on the action of medicines; and, in short, explanations of most of the influences or circumstances that should be considered by the therapist when writing a prescription. It also considers fully most of the forms in which any remedy may be prescribed for either internal or external administration or application, and gives rules for writing such prescriptions.

It is well indexed, has 184 pages, is in good type, on good paper, and is neatly bound in cloth. Price \$1.50. Aug. Gast Bank Note and Lithograph C215 Pine Street, St. Louis, publishers.

GOWERS' DISEASES OF THE NERVOUS SYSTEM. (Complete in 1 Vol.) A complete text-book. By William R. Gowers, M. D., Professor Clinical Medicine, University College, London, Physician to University College Hospital and to the National Hospital for Paralyzed and Epileptic, etc. 341 Illustrations, containing over 700 figures. One Volume, 1360 pages. Octavo. Cloth, \$6.50; Leather, \$7.50.

This book is now published for the first time in this country by special arrangement with the author, and contains all the matter in the two-volume English edition, with some corrections and additions.

This is a very complete treatise on Nervous Diseases. The author's systematic and interesting style, and large clinical experience, combine to make his work one among the really useful books of reference in clinical neurology.

To those who have Dr. Gowers' recent contributions to the diseases of the brain and spinal cord, the present work on diseases of the nervous system will be read with renewed interest.

The book is not so concise as Ross or Wilkes, but will serve as a somewhat more elaborate companion to it. The illustrations are numerous, but not so clear or perfect as so good a book merits.

For sale by Blakiston & Co., Philadelphia, Pa., or Simpson & Co., St. Louis, Mo.

THE DISEASES OF THE SKIN.

Among the most recent contributions to the literature of dermatology we find on our review table, a plain, practical and instructive book, by Prof. John V. Shoemaker, the dermatologist of the Medico-Chirurgical College and Hospital of Philadelphia. The book is beautifully and judiciously illustrated for its size and price; the text is clearly written, the subjects fully discussed, the type clear and large, and the formulæ numerous enough for all demands in dermatological practice.

The book is valuable, not only for what it contains, but for the many useless things the author has left unsaid.

The book is an 800 page, with six chromo lithographs and numerous engravings. D. Appleton & Co., 1, 3 and 5 Bond Street, New York, are the publishers.

THE PHYSICIANS' LEISURE LIBRARY.—The Modern Treatment of Pleurisy and Pneumonia. By G. M. Garland, M. D., Instructor in Clinical Medicine, Harvard Medical School. Formerly Professor of Thoracic Diseases, University of Vermont. Physician to Out-patients, Mass. Gen. Hospital. Physician to the Boston Dispensary. George S. Davis, Detroit, Mich., Publisher. Subscription price of the series \$2.50 a year. Issued monthly. Single copies 25 cents. The following is the author's brief preface: The ninth decade of this century will long be remembered in the annals of medical literature as the epoch of great progress in the study of microphytic diseases. Aroused by Koch's brilliant demonstration of the tubercle bacillus the search for pathological bacteria has been pushed with earnest zeal and with marvelous results. The fascination of the hunt is here combined with the satisfaction which accompanies accurately defined results and scientific demonstrations. This *brochure*, so far as it pertains

to pneumonia, is designed to give a brief summary of the present status of the pneumonia question, without any argument for or against the theories described. Occasional reference only is made to certain points which have not yet been satisfactorily tested. In regard to pleurisy, it is encouraging to note the general consensus of opinion as to its treatment. The book is brief, practical, useful and worth more than the price.

THE AMERICAN JOURNAL OF PSYCHOLOGY, Baltimore. This Journal, its publishers announce, is addressed largely to physicians interested in neurology, insanity and nervous diseases. It occupies an entirely unique position among such journals in that it is exclusively scientific. The Journal aims to make itself indispensable to physicians who wish to keep fully abreast of the great and increasing work now being done in European countries in the experimental physiology of the senses and central nervous system, the study of morbid psychoses, hypnotism and dreams, as well as the histology of the nervous system. Among the original articles printed or accepted are the following: "Hyperæsthesia Experimentally Investigated;" "Insistent or Imperative Ideas;" "Recent Methods and Results in the Histology of the Brain;" "The Psycho-physic Law: A Criticism of its Methods and Results and its Application to the Determination of Star Magnitudes;" "An Experimental Study of the Knee-Jerk or Patellar Reflex;" "Gradual Increments of Sensation;" "A New Binocular Phenomenon;" "An Empirical Study of the Dreams of Four Years."

It averages each issue one hundred and seventy-five pages.

The Journal is edited by G. Stanley Hall, Professor of Psychology in the Johns Hopkins University, and appears quarterly, at \$3.00 per annum. Orders should be sent to N. Murray, Publisher, Baltimore, M. D.

KERR'S INEBRIETY, is a three-dollar volume by an observer, who having had special facilities for the study of this disease, has made good use of his opportunities, and presents the fruitful results in the book before us. Its special features will receive further consideration in a subsequent issue. We commend the book to all interested in the subject. Blakiston, Son & Co., of Philadelphia, are the publishers. It is for sale by S. M. Simpson & Co., of this city.

Proces Criminel de la Derniere Sorciere Brulee a Geneve le 6 Avril, 1652. Publie D'apres des documents inedits et originaux conserves aux Archives de Geneve (No. 3465). Par Le Dr. Ladame, Visiteur honoraire de la Maison cantonale des alienes Membre associe etranger de la Societe medico-psychologique de Paris.

Le Progres Medical, Paris, 14, Rue des Carmes. Bibliotheque diabolique (Collection Bourneville), Proces Criminel de la Derniere Sorciere, Brulee a Geneve le 6 Avril, 1652. Publie d'apres des documents inedits et originaux conserves aux Archives de Geneve (No. 3465), par le Dr. Ladame.

Paralisi Generale Progressiva. L'andatura (Cammino) ed I Riflessi Rotulei studiati in Rappaorto Colle Lesioni Degli Sciatici e Della Midolla spinale pel Dott. Giuseppe D'Abundo. Aiuto di Clinica Psichiatrica e di Medicina Legale nella R. Universita.

Tubercular Syphilide of the Auricle—Becoming Surpiginous—with Ulceration and Sequestration of the Cartilage of the Concha, Tragus and Canal.—Followed by Membraneous Atresia—Deafness—Operation—Cure. By Robert Barclay, A. M., M. D.

What is the Legitimate Scope of Gynecology? Annual address, read before the St. Louis Obstetrical and Gynecological Society, November 17, 1887. By Walter Coles, M. D., Professor of Obstetrics Beaumont Medical College.

Insistent and Fixed Ideas. By Edward Cowles, M. D., Professor of Mental Diseases, Dartmouth Medical College; Medical Superintendent, McLean Asylum, Somerville, Mass.

Are Dipsomania, Kleptomania, Pyromania, Etc., Valid Forms of Mental Disease? By Orpheus Everts, M. D., Superintendent Cincinnati Sanitarium, College Hill, Ohio.

The Essential and Continued Fevers of Colorado. A paper read before the Colorado State Medical Society, by B. P. Anderson, M. D., Ex-President Colorado State Medical Society, Colorado Springs, Colorado.

On the Use of the Vaginal Tampon in the Treatment of Certain Effects following Pelvic Inflammations. By Thomas Addis Emmett, M. D., Surgeon to the Woman's Hospital in the State of New York.

An International Classification of Mental Diseases. By Walter Channing, M. D., Brookline, Mass.

The American Journal of Literature, Science, the Arts, and Public Affairs, Philadelphia.

Bulletin de la Societe De Medecine Mentale de Belgique. No. 47 Annee 1887 (4me fasciule).

Ueber Messung galvanischer Leitungswiderstande am Kopfe und deren semiotische Verwerthung. Von A. Eulenber, (Berlin).

THE
ALIENIST & NEUROLOGIST.

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ORIGINAL CONTRIBUTIONS.

The Nervous System in Disease.

*A PRELIMINARY AND FRAGMENTARY CONTRIBUTION TO THE
STUDY OF GENERAL NEURAL PATHOLOGY.**

By C. H. HUGHES, M. D., St. Louis,

Late Superintendent Missouri State Insane Asylum; Honorary Member British
Medico-Psychological Association; Vice-President International Congress
on Inebriety; Corresponding Member New York Medico-Legal
Society; Active Member of the Missouri State and
American Medical Associations, etc.

THE part the nervous system plays as the essential factor to the development of what we are accustomed to call disease in animals but which are in reality the secondary pathophysiological changes and chemical and mechanical dissolutions that follow the toxic shock first received by the central cell life and nervous system, and which has transformed it from a neurophysiological to a neuropathological condition, is plainly shown in the action of those poisons, animal, vegetable or mineral, which especially and immediately affect the nervous system, as well as in those chemical poisons which directly damage and destroy tissue and injure the nervous system through dissolution changes effected in the blood which nourishes and sustains it.

* Read before the Missouri State Medical Association, at Kansas City, April 19th, 1888.

In all cases of poisoning we see no constitutional or systemic disease until the central nervous system feels or shows the presence and morbid power of the toxic agent. Take, for example, the poison of the crotalus or rattlesnake, and I know of no better authority on the subject of its action than Dr. Alfred Drysdale, whom I here quote:

The actively poisonous constituent of the crotalus venom is an amorphous yellowish-white powder called by Mr. Weir Mitchell *crotaline*, which is a compound analogous to pytaline, pepsin, etc. It cannot multiply or propagate itself, as is the case with the poisons of small-pox, vaccine, syphilis, and septic pus, but its action more nearly resembles that of a catalytic ferment. The venom is albuminous, possesses an acid reaction, a sp. gr. of 1.044, coagulates at 160° F., is miscible with cold water and glycerine, alcohol coagulates it. Nitric, hydrochloric, sulphuric and tannic acids, chlorine water, solution of iodide of potassium, bichloride of mercury, sulphate of soda and magnesia, all give precipitates. Its virulence is not destroyed by dilution, boiling, freezing, or drying, or by keeping in a dried state. The coagulum produced by boiling is innocuous; on the other hand, the coagulum produced by the addition of alcohol possesses all the virulence of the original venom.

The venom contains an albuminous body, crotaline, not coagulable at 212° F.; an albuminoid coagulable at 160°, coloring matter and extractives soluble in alcohol and fatty matters, chlorides and phosphates.

Crotalus poison acts in the same manner on all animals. Strong men have died from its effects within a few minutes; dogs, rabbits and guinea-pigs have been killed within one minute, pigeons in less than half a minute, and small birds in a few seconds.

The operation of the virus is manifest immediately or within a minute, whether it is administered by injection into a vein under the skin, into the peritoneum, or into the trachea. The effects in large doses are rapid and destructive in the extreme; within a few minutes the skin has become mortified; within a few hours the tissues, to a considerable depth, have become almost fluid with decomposition and soaked with liquid blood; the latter is so profoundly changed in character that even before death it has lost its power of coagulation; immediately after death the blood is found perfectly diffuent throughout the body. *If the blood be examined in a case immediately fatal, no change whatever in its appearance or structure is detectable.*

* * * * * When however, death has been delayed some hours, evident and grave structural changes are discernible—notably the destruction of the fibrin; the blood has become so diffuent that it can be poured from one vessel into another like water. Even during life the blood loses its power to coagulate, its corpuscles no longer arrange themselves in rouleaux, its color becomes dark, even in the left side of the heart, owing either to the changes in the quality of the blood or in the tissues themselves, ecchymoses, due to extra-

vasations, are found in the various organs, if the animal stung had lived a sufficiently long time.

Death results from one of the following causes: 1. *Shock, in those cases immediately fatal without detectable lesion.* 2. Putrefacient action on the blood and tissues after the lapse of some hours. 3. Secondary absorption of decomposed matters after some days.

In a fatal case there is at first, usually, a cry as of pain or terror with shuddering, and perhaps an attempt at vomiting followed by extreme debility, giddiness and fainting; the victim staggers and falls, and is unable to stand or sit up again. Pulse extremely rapid, irregular, or imperceptible; eyes sunken; face swollen; body œdematous; skin jaundiced, cold, and covered with perspiration. Delirium, sleeplessness, torpor, or coma; voice whispering; dysphagia; intense thirst; incessant and bloody vomiting; stools diarrhetic, dysenteric, and involuntary; micturition involuntary; urine albuminous and bloody; vesications from the skin; the limbs or the whole frame tremble and are convulsed; the extremities become cold; the patient speechless and unconscious, and finally dies. In milder cases similar symptoms are present in a less degree, and recovery is rapid and complete. Within a few days the patient is restored to his usual health, though he remains weak for some time.

Here you see a typical and most powerful poison killing by the almost instantaneous shock, and before any detectable change could be observed in the blood by the most searching and skillful eye or the strongest lens. Those who do not see, as we do, *in the nervous system* the *physiological barrier* wall that ever stands in the animal organism between active and manifest disease and organic health, must of course invoke some conjectural explanation, such as the writer from whom we quote invokes to explain the fatal stroke; but why invoke the unseen and improbable when you can see in its functional failure or sudden cessation of its normal power, that the nervous system is directly stricken by the toxic agent, and life, of which it is the highest and final representative in the human organization, ceases in consequence of the stroke.

Indirectly only is the blood the life of the organism. All normal organic function depends upon the persisting integrity of the animal nervous mechanism; so long as that is preserved in a perfectly healthy manner there can be no perceptible disease, no matter what the state of the blood. In the nervous system is the organized and final principle of life and its inherent power of resist-

ance to assaults from within or without the blood-vessels, abides either longevity or brevity of existence in the individual. An inherently well endowed central nervous system—cerebro-spinal and ganglionic—will resist for a time a physiologically, chemically or toxically impoverished and depraved blood and the state of this same system, omnipotent in some organisms so long as it can find even a little nourishment in the blood to appropriate to its nutrition, makes the blood, or, if damaged, depraves it. Though it is most true that neural integrity cannot long persist when the blood is totally and for a very considerable length of time depraved.

There is a well-known condition of the blood, first described by Virchow and Bennett in 1845, and more plainly shown by Ehrlich than by any of his predecessors, which may be caused by malaria, protracted nervous exhaustion, grave neurasthenia or profound nervous shock. It is called leukemia. Now, if we follow Ehrlich in our examination of the blood of a leukemic patient, we will find three forms of colorless cells under our lens, namely: (a) Large cells, with large and sometimes double nuclei, similar in appearance to cells found in the medullary substance of bone; (b) cells smaller than the normal corpuscles, frequently containing broken-down nuclei, and (c) large colorless cells which Ehrlich has named "Eosinophil," because their protoplasm takes in the eosin coloring. These latter, Rindfleisch maintains, are cells which have not fulfilled their physiological task, and remain on the half-road to red blood corpuscles.* If this may be due to nervous shock or nervous exhaustion what conditions may not depend on nervous depression or profound neurasthenia, or upon a violent or gradual suspension of central nerve function?

On the other hand the well known resistance of cer-

* The method of staining consists in drying a thin layer of blood on a cover-glass in a desiccator for twenty-four hours. The glass is then to be placed in a glycerine solution, containing aurantia, indulin and eosin, for two days, to be then washed in water, dried again in the desiccator and mounted in Canada balsam. The red corpuscles will be stained orange, the white corpuscles colored blue, and the cells diagnostic of the disease will be clearly brought out by the eosin coloring.

tain organisms to the inroads which time, or starvation or the destructive processes of suppuration, septicæmia, toxic poisons and mechanical violence, are proofs of the abiding and preponderating vital tenacity of the nervous system, and the power and capacity of this paramount and superior of all the anatomico-physiological systems of the human vito-mechanism to claim and secure nutrition from the blood so long as the smallest quantity of reconstructive pabulum remains in the blood. It has its law of reconstruction as well as of disintegration, and that law does not abide in the blood, though states of blood more or less influence and determine (and in some organisms much more than others) states of the nervous system. The blood feeds or starves it, but it is well or poorly fed according as it demands nutrition from the blood.

In some organisms the nervous system is so unstable in some of its cerebral or spinal or ganglionic centers, that the slightest lowering of the standard of the quality of the blood, as by a short fast or a slight fever, causes disordered function, as convulsion, or delirium or tremor, while in others great sanguine depravity may for a long time be sustained without the fact being signaled by any symptom of brain or cord or ganglion that markedly attracts our attention. A certain organism with inherent inability to secure its needed nutrition in the ganglion cells of the cerebral cortex, for instance, is deprived of food for a few days, and the deprivation of accustomed nutrition is soon revealed in an attack of insanity, while a Tanner or a Succi endures a fast of forty days or longer without a sign of delirium.

Another, whose insanity prompts him to refuse food—lives for weeks without nourishment, the disordered psychical center securing enough nutrition from the blood to sustain it in aberrant activity, but not enough for repair, while the other parts of the body continue to secure their own, for long time performing, in a measure, their functions, while the blood grows poorer and poorer in material for reconstruction.

On the subject of fasting Forbes Winslow has given us the following record:

The longest time recorded in the annals of physic in which a man existed without food was sixty-one days, the case being that of a young man driven mad from overwork. Alexander Benedictus mentions a case at Venice where a man lived forty-six days without food. The history of France states that Louis the Pious Emperor of France, who died in 840, existed forty days without food or drink. Albertus Magnus gives us the record of a woman of Cologne, who lived for seven weeks only on water. It is said that Democritus lived to the age of 109 years, and that in the latter part of his life, for forty days, he lived on smelling honey and hot bread. Raulin relates another case where fifty-two days of fasting took place on water alone. The *Medical Gazette* for July, 1883, contains two remarkable instances; one of these, a patient, is stated to have lived six years without swallowing any food, the mouth being occasionally moistened with water, tea or whey, which was not swallowed, but spat out. In the other case, which was originally recorded by Prof. Ricel, of Turin, an inability to take food existed for three years. There are many traditions in all histories relating to the means employed by various individuals to support life during danger and privation. The Indians of Asia and America, when they are bound for a long journey where there is a possibility of such a state of affairs existing, prepare themselves for emergencies as follows: They mix the juice of tobacco in the form of small balls, which they retain in their mouths. The gradual solution serves to counteract the uneasy craving for food, it having been proved by experiment that clay introduced into the stomach relieves hunger. In 1770 a woman living at Yarmouth created considerable excitement and amazement in the world. She was reported to have lived for seven years and a half without tasting food, her lips only moistened with water.

The manuscript department at the British Museum contains a quaint description of the fasting of Jane Hodges (Sloan MS., 4811). She lived in the year 1669. She suffered from hysterical aphonia, and neither ate nor drank for nine weeks, so it is reported. She was under a delusion, and stated that "she fasted for the sins of the people, and that she was the savior of the nations." She ultimately recovered and took food. In 1870 we read of the "Lancashire fasting girl," Ellen Sudworth, aged 11. This is, however, not one of clear abstaining from solid food, as she lived on liquids and soups.

Now if the blood alone were the immediate life of the organism and the nervous system had no inherently organized conditions for perpetuating its own vitality by drawing on the blood (no one doubts the ultimate dependence of all animal life on the blood) how are we to explain this life-persistence under such nutritional deprivation as has been indubitably proven after making all due allowance for the

fiction that may surround the history of some historical fasters, except upon the fact that the nervous system, once fully organized and built up, becomes not only a law unto itself but a law unto the whole—a law maker and executive of physiological law? Its vital power and endurance and resistance, becomes something inherent and not immediately dependent on the blood, except when the blood is extraordinarily depraved, though from the blood it receives all the possibilities of its power. It undoubtedly has the power in some organisms of getting more from the blood than in others, and of transmitting greater power of appropriation and resistance and control in some organizations than in others.

This is determined in the primordial cell or protoplasm which predestinates the character and power of the nervous organism as of all other organisms, to endure and appropriate for endurance and resistance from the protoplasm, as the protoplasm takes from its fountain source, the blood. Herein resides the increased or diminished resisting power of organism in the presence of disease-exciting influence, and lower down, but under its influence, resides the vincibility or invincibility of cells to the direct causes of disease, and by the term "Causes of disease," I mean what are often termed diseases, viz., bacilli, malaria germs, atmospheric conditions, etc.

The protoplasm and the cell of the ovum precede the blood, though they subsequently draw their life from it.

The explanation of the immunity secured by M. Pasteur's inoculations, by the vaccinations of Jenner and from recurring attacks of contagious exanthemata by a previous attack successfully withstood, is in the trained and developed power of resistance acquired by the central and ganglionic nervous system. The immediate chemical changes take place in each re-vaccination as in the first. The immunity of acclimatization is brought about in the same manner by the gradual drilling of the resisting power through long residence, in latitudes in which death-dealing epidemics prevail. It is thus that yellow fever in the

South is called the strangers' fever, because when a stranger goes where it is, at a time when it is epidemic, he is overwhelmed and the nerve centers of organic life succumb to assaults which those of the vigorous acclimated citizen withstands without harm.

The same fact underlies the adaptability of the organism to the demands of extraordinary physical exercise or labor. If the central nervous system, in those portions of it which preside over and respond to the demands for nutrition and development does not grow in power, a condition of local hypertrophy with a central neuratrophia and consequent exhaustion results and heart failure from inadequate central innervation follows. The central reconstructive and sustaining forces fail to respond to the demands of the peripheral mechanism for more power, and collapse and death follow. The reciprocal balance between muscular nutrition and power and central nerve power are no longer sustained.

The old maxim, "*ubi irritatio ibi fluxus*," as applied to the reciprocal response of the vascular system to the demands of the muscular, through the presiding vasomotor nervous mechanism, is no longer possible of perfect execution, when central sustaining power ceases to keep pace in development with peripheral muscular demand, and if the over-exercised muscles get what they demand, some other and more vital part, as the heart, robbed of its vital innervation, suddenly suspends or gradually fails in function.

Auto-toxication. If we turn now from poisons from without to poisons from within, we find that within certain limits the excretory poisons serve to stimulate physiological action in the nature of combative resistance. The biliary salts and coloring matter in excess in the blood increases the activity of the kidneys and hastens excretion, so as to prevent, in well endowed organisms whose ganglionic organisms respond well, the overwhelming of the system.

The salts, too, which it is the function of the kidneys

to excrete, if in excess in the blood, excite corresponding excretory effort in certain well endowed organisms, while others neurally defective, succumb to auto-toxication.

Those poisons made remotely from the blood, which the kidneys and other excretory organs constantly drain off, exist in other form in the plasma of the blood and later-formed tissues in such proportions that they would finally overwhelm the most powerful organism.

A sudden increase of ten times more than normal would probably overcome the neural resisting power of almost the strongest organism, *but it is the power of central neural resistance that constitutes the health of the individual.* It is when this fails or succumbs that disease and death appear. The mere presence of poisons in the system is not disease, but the inroads they make and the damaging and embarrassing effect on physiological function, constitute disease.

The lower intestinal contents are toxic in character, but some organisms are effected by the toxicity of fecal matter, sooner and more profoundly than others. There is a vast difference in the facility with which intestinal conditions affect organisms, as there is in the facility with which inadequate urinary secretion and retained urea influences the brain to cause narcosis or convulsion.

Cerebral and cerebro-spinal and ganglionic health, like general bodily health, is high in proportion to the degree of resistance it displays to the ordinary deleterious effects of adverse environment.

The most highly endowed nervous center will claim and secure from its vital pabulum, the blood, the essentials for its sustenance so long as there is any material existing in the blood free from toxic disintegration capable of sustaining life. This is the vital tenacity which differs in different organisms. It is the inherent resistance and natural tolerance of organism, the true *vis medicatrix nature*. It resides primarily in the germinal cell. It is the heritage of the best constitution, and the final endowment

of a good physiological lineage, ancestral and evolutionary. It makes disease more or less difficult of lodgment in the organism and postpones the day of dissolution. The essence and secret of longevity and disease-resistance is in the inherent and developmental endowment for perpetuation of its own vitality, of the central neural mechanism.

We need not pursue the subject further to see how essential it is to consider the neural factor in the study of disease.

The nervous system is king and man is never conquered or dethroned by the assaults of disease till the nervous system surrenders.

Malaria is powerless, the cholera bacilli are futile for harm, typhoid makes no fatal inroads on the citadel of life, till the incursions of these morbid marauders break it down.

The same is true of the bacillus of phthisis and the virus of every fever. The structure stands defiant and the physician hopes in the *vis medicatrix naturæ*, so long as the nervous system holds the fort.

The nervous system is the central executive and universal sentinel system of the organism. It is both legislative and executive of the body physiological, and exercises its veto or restraining power over both physiological or pathological processes, according as our nature and science train it. It has its subordinate, tributary, and sustaining force in the glandular, vascular, osseous, secreting and excreting systems, but it commands and regulates them all, though they undoubtedly influence it, as citizens of the State may disturb the king.

We are fast approaching that era in medical observation and thought when the neural pathology must reign high, if not paramount; when the observation of Cullen, made in another century, is to be verified anew by universal medical testimony, for the phenomena of disease are much the same to-day as they have been in the past, only we may now see further and broader, and the common

medical mind may now see plainly what the geniuses of the past but dimly discerned.

Quantum ego quidem video motus morborum fere omnes a motibus in systemate nervorum ita pendent, ut morbi fere omnes quodammodo Nervosi dici queant — *Cullen's Nosology: Book II., page 181. Edinburgh edition, 1780.*

From this cursory glance at a field as broad as our ever expanding science we are prepared to see how it is possible, for some of us at least, to look upon certain diseases as belonging to the nervous system, whatever their grosser appearance, such as the numberless cutaneous neuroses, leprosy, hyperidrosis, osmidrosis, etc.; to regard the phenomenon of fever as a neural disturbance, glycosuria, Ranaud's disease and hæmophilia; the neuratrophic sequellæ of gout and rheumatism, noted away back by John Hunter; the motor, trophic, vasomotor and sensory paralysis of malaria; asthma, hay fever and the numberless toxic peripheral neuritides.

Look carefully over the vast field of disease, as the research and vision aids of our science, unfold it to us, and though we see bacilli in numbers and varieties never before discovered, swarming about the damaged physiological edifice, as we see carrion about a carcass, rats running from a sinking ship, and thieves as well as honest-intentioned men gathered about a wreck, where human life or property abides, and cannot fully explain the purpose of each, whether scavenger, parasite, burglar, or incendiary; we see one thing plainly, if we look at organic destruction from its prephysiological stand-point and that is, that the most sustaining part that had to give way before destruction could be possible, was the neural mechanism that binds and keeps in harmonious functional activity and normal relationship, the various parts of the human organism; and we see in the flood of light which modern science has shed over the whole field of Medicine, the clear translation of the significant words of the physician of the past above quoted, namely, from all that we can see of the movements of disease in the human

body these movements are so dependent on the nervous system as to entitle them, in a manner, to be called nervous.

And we are calling a great many diseases nervous now, and understanding them better and treating them more successfully than our ancestors did.

500 N. JEFFERSON AVE.

MORAL INSANITY.

Translated by JOSEPH WORKMAN, M. D., Toronto, Canada.

WE are indebted to our distinguished friends of the *Italian Phreniatric Society* for a copy of the report of the proceedings of their Fifth Congress, held at Siena in September, 1886. The entire contents are exceedingly interesting and very instructive. The sittings of the Congress extended over six days; the papers read were very numerous, and the discussions which followed were of an unusually high order. Nothing less was to be expected from the eminent gentlemen in attendance. Our readers may readily understand this when we present the names of even a few of the members in attendance. It would be a pleasing duty to give the whole list, but our disposable space does not permit the gratification. No American psychologist or alienist will require any confirmation of our eulogy after recognising the following well known names of the distinguished writers and speakers whom we here present, viz:

Senator Verga, Doctors Tamburini, Buonomo, Lambroso, Algeri, Bianchi, Marchi, Seppilli, Verga, Tonnini, Tanzi, Morselli, Michetti, Amadei:—we must halt, for however much we desire to manifest our appreciation of the merits and great talents of the whole body, we are convinced the readers of the *ALIENIST* are well prepared to admit that a phreniatric society, showing in its membership the illustrious names above given, must be an honour to the nation which they so ably represent; nor is it without fraternal satisfaction, and even some degree of pride, that we are able to say it has been through the pages of the *ALIENIST*, almost exclusively, that American

readers, (and, we may venture the insinuation, a few English ones also,) have become acquainted with the merits of Italian phreniatric and psychological literature.

We have selected from the proceedings of the Siena Congress, as probably most interesting, and perhaps not untimeously instructive, to our readers, the discussion on the paper of *Dr. L. Brajon*, on "*Acquired Moral Insanity*,"—a rather short one, but its brevity is amply compensated by the long discussion evoked by it. As it would be unfair towards the distinguished speakers who participated in this discussion, to curtail the report, we have decided on reproducing it in full, though it will hardly be possible to present it in a single number of our journal.

The following abstracts from the paper of *Dr. Brajon* will be sufficient to indicate the prompting origin of the discussion which followed, which certainly covered far wider ground than its author had anticipated. The little spark kindled a great, indeed a brilliant fire.

Dr. Brajon's case of so-called "*Moral Insanity Consecutive to Mania*," is thus described by him :

"G. T. L. was 24 years of age ; both on the paternal and the maternal side, there had been neurotic relatives. Up to the age of 17 he had behaved wisely and well, applying himself to elementary school studies, from which he profited sufficiently, and afterwards he willingly undertook the work of attending in a mercer's shop. But on reaching the age of 17, he became suddenly taken with a state of stupor, mutism, indolence, and inaction, and he kept in bed, a prey to obstinate sitophobia. This lasted about a month, after which it changed into the opposite condition of maniacal excitement with furious delirium, in which he broke and tore everything, and accused and threatened all around him, so that it became necessary to have him removed to a place of security. He then became clamorous, had hallucinations of sight, and tendency to suicide. This state continued for about eight months, after

which he gradually became calm and regained the use of his mental faculties, and being found apparently rational he was discharged; but very soon after getting home, a radical change in him was observed, and his deportment was altogether different. He was no longer docile, but unmanageable, imperious and lazy. In order to carry out his new mode of life he first sold his own clothes, and next other things of the house. He extorted money from his mother, a poor widow, who, by struggling as a teacher, had to provide for the sustenance of four other children. If he failed to be gratified in his desires, he set to work in tearing, breaking and turning upside down everything in the house. Things having arrived at this pitch, his mother was forced to send him to the asylum of S. Servolo."

It is unnecessary to give the details of his asylum behaviour. Every asylum physician will be able, from his own experience, to fill them in; and even the closing paragraph might be left to his conjectural capacity; but as it presents an important practical admonition, it will not be read without profit.

Dr. Brajon closes his paper thus:

"Finally, by captivating the affections of those in charge, with the view of obtaining his liberation, he began to be very good, tranquil and obsequious; he assisted in some of the work in his own ward and elsewhere; and after a year's asylum residence, he promised to behave honestly and industriously, so that he obtained his wished for liberation. But he very soon gave himself up to his former mode of evil life. He was placed in the position of a shopboy; he was admitted as a boatman to a private family; next among the revenue guards; but he either left all places voluntarily, or was discharged from them, in a few days. He finally became a quarrelsome rowdy, and having assaulted the police, he has gone on in his evil courses, and within the last few years, he has been often under arrest and confined. Between drunkenness, prison and the asylum he has passed his days."

The discussion which followed the reading of this paper took a very wide range, covering the whole field of moral insanity; it was commenced by Verga, who spoke as follows:

Moral insanity has commanded my attention during the three years that have elapsed since the Congress at Voghera. I have felt bound to this duty not only by my position as a member of the committee which was charged with the consideration of this subject, but also by its very great importance; it may be said to be a sociological rather than a psychological subject, because of the influence it may have on the state of society. The little, indeed the very little, fruit that I have gathered, I would very gladly have given to the gentleman who assumed the position of reporting, had he been here. I shall now, begging to be excused for my dullness of hearing, state, perhaps imperfectly, what would have been told by another.

In the first place I think we ought to insist on the distinguishing of reasoning mania from moral insanity. The former is a genus, the latter is a species. All the subjects of moral insanity are reasoning persons, but all the reasoning insane are not the subjects of moral insanity. The latter have a particular ingredient; they have the perversion of instincts, the tendency to badness, and that delirium of actions which Brierre de Boismont has so called.

Moral insanity is usually native, or congenital. It seems to me that this is the idea held by our able colleague, Dr. Grilli. It is the idea which led me to place moral insanity immediately under the *phrenasthenias*, as if it were a bridge of passage from the congenital insanity to the acquired. Dr. Semal expressed very nearly the same idea in the Congress of Auversan. Professor Paul Moreau (de Tours), in his memoir, entitled "*l'Homicide commis par les enfants*," has mentioned a moral insanity evident in children; and not long ago I myself sent a splendid sample of it to the asylum of Mombello. Dr. Gonzales very well knows of whom I speak.

In some rare cases, or, if you so wish to call them exceptional, moral insanity appears to have been acquired; and if I have rightly understood him, Dr. Brajon has to-day exactly described a case of moral insanity consecutive to another mental form. It is notorious that a more or less protracted period of moral insanity is the prelude to some forms of insanity and especially to paralytic phrenosis (general paresis). We might therefore make a primary distinction between congenital moral insanity, and acquired moral insanity.

As to its essence moral insanity presents two species or varieties. There are some individuals who, though conserving free, and even potent, their syllogistic faculties, yet often commit extravagancies, obscenities and real crimes, because they possess not that which is called the moral sense; they do not perceive the impropriety of their acts, so that they feel no remorse or penitence, and they even wonder that other persons see anything wrong in them. To these persons the very energy of their intellect is prejudicial, because they are able to justify their offences, and, bless the mark! to render them amiable. This psychological condition has by some writers been called *moral daltonism*. There are others who, from time to time, for a mere trifle, or even without any cause whatever, rush into grave excesses, such as homicide, suicide, etc. These understand how to act wrong; they also deplore their bad deeds, but they assert that they could not act differently, and that they are dragged to evil by an irresistible force. This is a fact which has been observed but too often of late years. The distinguished Professor Lombroso, in this relation, very sagaciously observes, that such individuals, when carefully examined, are found to be subjects of epilepsy, and that their evil acts may be influenced by accesses of *epilepsia larvata* or a substitutive mania. The cases clearly detailed by my nephew, Dr. G. B. Verga, seem to give some support to this view.

We next have some individuals, and they naturally are the worst of all, in whom both species or varieties of

moral insanity are combined. These perhaps figured in the ancient codes as brutal criminals.

In the meantime moral insanity has been gaining ground, and though in the beginning of the present century it was excluded from all the statistical tables of mental diseases, as a savage thrust against justice and law, it is now admitted as a guest in almost all the statistics of asylums. The American, Dr. Hughes, of St. Louis, editor of the *ALIENIST*, when at the Medical Congress in London, admitted it under the title of *affective insanity*. Van Persyn, the distinguished director of the most important asylum in Holland, has also accepted it. Dr. Kesteven, of England, does not doubt it; he even extends its domain, saying that all crime is insanity. The famous Guiteau appeared to Lutaud and others to be morally insane. As respects Italy it may suffice to say that in the four censuses which I have made in a tabular form, moral insanity has been recognised in nearly all the asylums, including those of Trento and Trieste. On this occasion I observed that moral insanity is most frequent in the male sex, and in the upper classes.

We must not however admit moral insanity with our eyes closed. It would then be too easy for real delinquents to escape the consequences of their offences. Lawyers would, in some cases, magnificently comprehend the value of *moral daltonism*, and in others of larvate epilepsy. There are poor devils who do wrong, believing it to be right; these creatures, because of a violent and untimely discharge of some cerebral cells, involuntarily and irresistibly, or even unconsciously, commit serious offences. It is necessary therefore, to distinguish the true cases of moral insanity from the false or simulated. If some individuals pretend to have a bad headache, or to be very weak, in order to avoid work, it does not follow that other unfortunates ones are not, from such causes, unable to work. It is indeed difficult to distinguish with certainty, these two classes, the real and the simulated or fictitious. This was the question which was

especially recommended to us by the Congress of Voghera. We may however decide, with much probability, on the presence of moral insanity, by adopting the following criteria :

1st. By ascertaining whether the parents, living or dead, of the individual submitted to our judgment, were affected with mental or nervous diseases.

2nd. Whether the same individual presents degenerative characters, as anomalies of the cranium, asymmetry, depression of general sensibility, hyperæsthesia, convulsions, recurrent, nervous tics.

3rd. Whether the offences committed by him had any relation with their cause, and finally whether he has become incorrigible.

What must we do with these persons? I believe that rather than irritating them by undeserved rigors in common prisons, where they may become still worse by contact with real delinquents, and from which they will go out to commit new and more grave offences, we should declare them affected with moral insanity, and therefore irresponsible or semi-irresponsible, and they should be placed in criminal asylums, and be detained there until they give signs of amendment, for it is unjust, as I have said on another occasion, that because of their intellectual eclipses, the good members of society should have to live in constant fear and suspicion.

Michetti spoke next. He said, I have asked the privilege, not with the intention of entering into the merits of the discussion with which we are now occupied, as it seems to me that the subject of moral insanity, in order to be fully and profoundly discussed, would require much time and a great accumulation of observed facts; and in the present state of our Congress, though these may not be defective, yet we have them not all now present. Professor Verga has, in my opinion, said enough to establish the limits within which the discussion should be conducted, but this will not suffice for the substantial solution of the problem into which we have entered.

As for myself, I set forth by declaring that the fact of an entity, which I venture to call morbid, is now indisputable; it is manifested in a perversion of the affections, and although this may be connected with an enfeeblement of the mental faculties, it certainly has no relations which permit us to derive it immediately from intellectual deficiency. It appears that there are, in the sphere of the affections, rather than in that of the intellect, such lesions as lead the unfortunate victims of these maladies to commit acts that are repugnant to the moral sense, but yet not contrary to any logical co-ordination of ideas. It is a fact that though moral insanity should not be confounded with reasoning mania, (and Professor Verga has very learnedly detailed the reasons), yet it very closely approaches the latter; and, although it may, in some cases, be easily distinguished, in many others, I think it might very well be defined as a form of reasoning mania. I also admit that moral insanity is always congenital; I believe that it is absolutely a hereditary malady, and I also venture to differ from the opinion of my illustrious master, when he holds that it is sometimes acquired. I do not think this can happen, or it will happen very exceptionally; I do not believe this, because the cases in which it may have been regarded as acquired are those with paralytic phenomena, and in these cases I cannot see how we can any longer speak of moral insanity; we shall here have somatic lesions which have been clearly determined by science, and these may fully account for a perversion of the mental faculties; hence it does not appear to me that in this case we can speak of moral insanity, but of a paralytic incipient delirium which will have a form modifying the habits and the affections, without yet affecting the logical order of the ideas; but this phenomenon is substantially the product of a lesion, and we cannot have moral insanity if a paralysis is included in it.

I fully admit that in a real case of moral insanity there is realised what the illustrious professor Verga has

said : the intellect in some way injures the affections ; that the sense of the useful to himself, the sense of self-gratification, so far domineers over that of duty, that these persons are unable to abstain from acts which they regard as advantageous to themselves, and they care not for the harm they do to others ; I believe that in these persons the sentiment of self-advantage, self-benefit ; prevails over the sentiment of duty and fraternal love, so as to produce a loss of equilibrium in the intellective and the affective functions, sufficient to constitute a true disease.

These unfortunates do wrong for the sheer purpose of doing so ; they know it, and they do it with full determination. But in order to know whether they do it because they are irresistibly drawn to it, this we have to accept on *mere faith*, because we have to believe them ; but we have not any proof whatever, truly to establish that, if had they strongly wished to avoid the act, they would have been unable to do so. If we could obtain this proof, the question would be solved, and we should no longer speak of wickedness and criminal tendencies, but, in the strict sense of the word, of a disease characterised by want of will-power.

I have also some doubts respecting the statement of the illustrious Lombroso, in whom, in another relation, I recognise the very great merit of having established the affinity between epilepsy and moral insanity. As a general rule, Lombroso has found the key of the phenomenon, yet I venture to doubt whether it is a constant fact, an absolute law, that the epileptic condition is invariably conjoined with moral insanity ; in very many cases, indeed in the majority, an epileptic state, either manifest or larvate, is so complicated as to carry with it the phenomena which, in our estimation, characterise moral insanity ; but that there is an intimate relation, an immediate descendance, an absolute fraternity, so to say, between these two forms, I absolutely refuse to admit. I know very many epileptics who are anything but morally vicious ; I also know many persons who are morally

vicious, in whom I have never been able to discover any sign that would justify the diagnosis of epilepsy.

I believe that moral insanity is absolutely not a simulated form; I believe that in a medico-legal discussion we could never find much difficulty in refuting the suspicion of simulation, regarding a morbid form which had indicated to us a moral insanity; it seems to me to be very difficult to assure ourselves of proof of simulation, for it requires many studies, many observations and very close enquiries, before we can establish it; and I find that no form, or at least but very few phreniatric forms, present, in themselves, evidence so reliable for practice as moral insanity; when we have present the means by which it may be discovered, and when we hold in view all the alterations manifested, it must be very difficult of simulation. I now say frankly that it appears to me to be one of those forms which an individual would hardly select for simulation, because it is so vast, and one who is not a medical alienist would find it very difficult to deceive an expert.

Finally, I say that in order to establish the existence of a moral phrenosis, the means of deciding cannot be furnished unless by the full history of the individual and of the case, and from a precise recognition of a defective relation between the intellect and the affections, and above all from that incorrigibility to which Prof. Verga has justly alluded. I do not admit that degenerative characters suffice to give us an exact idea of moral insanity. I admit that these characters are often found in the unfortunates, who are morally diseased, but I here repeat what I have said of epilepsy.

When moral insanity has been alleged to depend on one of these alterations which are said to form degenerative personal character, in my estimation, it would cease to be a phrenopathia, and would become a nervous form, like the majority of mental maladies, a nervous form which has its substratum in a physical alteration which we are well able to appreciate. This is my way

of viewing things, purely and simply in a practical order, because, I repeat it, a profound scientific discussion of moral insanity, in the strict sense of the word, with the means at present at our disposal, seems to me very difficult.

Verga. The courteous manner in which Dr. Michetti has directed his remarks to me, has taken from me all desire to reply to him, and all the more as I see that there is not any substantial difference between his opinions and my own. He holds that there are points of contact between moral insanity and reasoning mania; and I also have admitted that there are between the two forms of insanity those points of contact which always exist between a genus and a species. He would have moral insanity always congenital; I have admitted that it is only exceptionally acquired. He has shown that general paresis has characters quite different from moral insanity, and that the two should not be confounded; I also declared that the moral insanity in many cases of general paralysis, simply constitutes the initial period, and that this passes off more or less promptly. I have therefore reason for congratulating myself, from seeing that almost along the whole line, in this grave question of moral insanity, I march in accord with him.

He says that what I noted respecting change in the instincts in paralytic phrenosis, cannot be regarded as moral insanity. Neither do I so regard it; I said that it is the prelude of paralytic phrenosis, the initiation; the malady is therefore still paralytic phrenosis; but in the mean time this initiation manifests itself in a perversion of the instincts. Now, what must I call this period, in naming it rightly? I call it an access of moral insanity; it is one of those accesses which have been specially noted by Brierre.

Finally, another circumstance mentioned by Dr. Michetti is that relating to the simulation of moral insanity. He said that moral insanity could never be simulated. I believe he is right, but I may not have been

fully understood, or perhaps I have not spoken clearly. By simulation I mean that the person asserts that he felt himself drawn, against his will, to do a certain act, whilst this is not true. This point being established and made clear, it seems to me we are in perfect accord.

Morselli. Our conception of moral insanity cannot, in my humble opinion be enlightened otherwise than by the researches of criminal anthropology. Just as we owe to Professor Lombroso so many other discoveries, so are we indebted to him for the creation of the type of the natal delinquent; now, whoever has followed the discussions which have occurred on the delinquent man, cannot fail to find an intimate relation, an analogy, and even an absolute identity, between what the anthropological school, now at last, call congenital delinquency, and what we must accept, in our classifications, under the name of moral insanity. This identification, it seems to me, throws light on the clinical conception of moral insanity; it sweeps away half of the embarrassing questions of the prodromic moral insanity of other forms, it also, up to a certain point, sets aside the questions on the identity, insisted on by Prof. Lombroso, between epilepsy and moral insanity, an identity which, in unison with Dr. Michetti, I cannot accept. Were the question freed from these secondary problems, we could confront this clinical form (for the present I adopt the term, *clinical*, but I shall after this better explain my idea) which we have to designate as moral insanity. There are certain states in which the moral sense is perverted, and these constitute a phenomenon altogether accessory in other forms of common mental alienation (for example, in epilepsy, mania, etc., etc.), but these do not at all constitute the type which we should have. It would be, to me at least, a deplorable confusion to conjoin a symptom such as perversion of the moral sense, accompanied by the actions which are exhibited in the first days of almost every acute mental disease, with that form, or morbid

entity, which we should in our tables retain under the title of moral insanity.

Moral insanity (and this I am constrained to say), for us, who hold and defend the ideas of the anthropological school, is not a disease, is not a morbid process; it is a process which pertains to teratology, it is a teratological, not a morbid state, for there are not in it those characters which in pathology we term morbid; on the contrary, it is a special congenital state, an anomaly of development, an arrest in the development of the ethical sense; but it is not at all a pathological form; a morbid form in which we trace any lesions whatever. We may in course of time, discover some lesions of development, some anomalies, and researches of the criminal anthropological school have already thrown light on the teratological conception of these congenital forms of insanity, inasmuch as they show that there are individual varieties in the histological development of the nervous centres; and the histological or the pathological genesis of moral insanities, being thus illuminated, it appears to me that the type of moral insanity is not at all that of a disease; it is an anomaly of the mental development, which has its basis in a teramorphous, or a teratologic, development of the nervous centres and their functions. Evidently, for me at least, one-half of the harmful confusion between those perversions of moral sense, which are manifested in paralysis, etc., and moral insanity, is thus removed.

In my opinion acquired moral insanity has no existence; there will be a moral perversion which precedes the outburst of the more salient phenomena of psychical alteration, but acquired moral insanity I do not understand, unless we should altogether modify the conception which we ought to have of this teratological form.

The researches of Lombroso, Ferri and others who have inaugurated the new era in criminal sociology, (the only school, we must speak the truth, which has the right to be so called is the *Italian*, because there is not any other, and it is the one on which the rest of the world

has fixed its attention) have shown that moral insanity, considered hitherto as belonging to psychiatry, on the contrary belongs to sociology; it is, if you will so have it, an atavic, anomalous, non-morbid, teratological type of the present human society, which ought to figure in the delineations of pathological psychology, not understood as psychiatry, but as a study of all the deviations which may be presented in the human mind. This conception, as I think, shows that this form must be absolutely congenital; it clearly exposes the error of confounding it with those symptomatic forms of perversion of the moral sense, which have nothing to do with moral insanity; and finally it leaves the question open, which has been propounded by Lombroso, as to the identity, or at least the very close affinity, between moral insanity and epilepsy. Permit me to say a few words on this head, and I shall close.

It is certain that there appear to be points of analogy, and the sagacious eye of Lombroso could not fail to see them; he saw that in some cases moral insanity was combined with epilepsy; he next saw that epilepsy presented a perversion of the moral sense, and this created in his mind the conception of identity. I am unable to admit it, because I do not, even etiologically see why one born with a teratology, a special embryology, should be epileptic. Admitting this, we shall find a contradiction in this very criminal anthropological school, and it consists in this: This school finds analogies between moral insanity, understood in the sense which I have stated, *i. e.*, an abnormal teratological form, and the state of our progenitors, whether these were of inferior human race, or animals. Now this relation does not necessitate the fact that the inferior human races or animals must have been epileptics. It is certain that epilepsy has always existed; discoveries show that it existed even in the stone age, but this does not imply that when we find a congenital alteration of mental development from deficiency of the moral sense, this deficiency or anomaly

should be identified with a morbid form such as epilepsy.

Epilepsy certainly gives origin to a morbid character, or if you would have it so, to a want of moral sense, but this is a co-phenomenon which is a natural part of the clinical picture of epilepsy. The same phenomenon is presented in other forms, for instance, in hysteria there is a perversion of the moral sense,—why then should we not identify hysteria with moral insanity? In alcoholism also there is perversion of the moral sense; we in general find it in all the forms of histological degeneration of the nervous system provoked by poisons which are infiltrated into the organism. Now it seems to me that it would be a very great confusion to link with the delirium of acts, anomalies, disturbances and perversions of the moral sense, those congenital anomalies which, according to the anthropological school, should represent alone the exclusive, unique type of the moral insanity which ought to be presented in our tables.

Verga. I think I have heard it said that moral insanity is a teratological fact, a monstrosity. I concur in the maxim, because moral insanity is usually congenital; but absolutely to exclude the possibility of moral insanity being developed in the course of life, and chiefly in early age, seems to me to be going too far. How would Prof. Morselli explain the cases of those individuals, who during all their boyhood and adolescence had always behaved admirably, and only in puberty had manifested a total upset in their affections and tendencies, in consequence of which they have been called moral fools? I see that some admit a *degeneratio juvenilis*, and this degeneration is in fact manifested only at the period of puberty. Well, admitting this, I cannot conceive why, unless as a mere conventionalism, we should constantly and necessarily understand by moral insanity a teratological fact. I beg for an explanation.

Morselli. Prof. Verga has alluded to cases in which moral insanity had been developed at the period of

puberty. I do not question his observances, but I do not know whether these cases really belong to moral insanity. If they have been cases which were observed in past times, when the conception of moral insanity was not so nice as it now is, I might have some doubts of the accuracy of the diagnosis; if they have been cases recently observed, since a great revolution has taken place in the conception of moral insanity, especially through the researches of the criminal anthropological school, I confess I am ignorant of them. According to our views moral insanity is a congenital form; this does not exclude cases in which moral insanity may follow some grave injury, that has fallen on the brain even during its early phases of development; it has not been said that moral insanity must be hereditary, it may indeed be a purely embryonal, or a foetal form, it may be a form that is developed in the first years of life, but it suffices for us that the associate development of the fibres, the total development of the cells that constitute the web of the gray substance, the histo-genesis of the nervous development, has not been completed,—this is enough for us. We all know, as to puberty, that at this time of life development has not been completed I have referred to the researches of Flechsig; we all know them, we know that at a certain time in life those paths of association which constitute the heritage of all adult persons, have not yet been established; it is then evident that in infancy, that is, in the period in which the greatest ferment takes place in the development of the nervous centres, there very well may be histological modifications, not in the pathological, but in the teratological sense of the term, for example, from injuries to the head, etc., and in this way we might explain those very rare cases, which may have been developed after the causes mentioned by Prof. Verga. But, I repeat it, if such cases belong to the time anterior to the conception of moral insanity of which I have spoken, I would say, as we are now in cholera times, let them be put

in quarantine; but if they belong to the posterior time, then let us know all about them, and we shall cheerfully receive them, for it is our earnest purpose to discover, as far as possible, the truth; if this truth shall enlighten us and turn us back from the path we have been treading, all the better, we shall be happy to discover our errors; but for the present, until we have felt assured of a complete diagnosis, derived from clinical observances, made with conceptions which we all can accept, we must doubt the theory that moral insanity should not be regarded as a congenital form. (The Congress now adjourned till the afternoon 20th September.)

AFTERNOON SESSION.

Dr. Brajon. It is known that all children (*bambini*—infants) have evil tendencies, instinctive perversions, and hence we see them strike, throw themselves on the floor, and exhibiting cruel instincts in maltreating and sometimes even in killing animals; these tendencies are corrected by education.

[NOTE BY TRANSLATOR. If Dr. Brajon here spoke from observance of his own children, we pity both himself and his children. If he meant all Italian children, we decline to accept his draft on the bank of imagination, without substantial endorsation, and even then we shall insist on a very large discount, even larger than Prince Henry deducted from Falstaff's "men in buckram."]

Further, we have the fact that many bad ones, who are placed in suitable institutions, have a tendency to crime. These, when so placed, and carefully educated, are often restored to society and the family, and become good citizens. But according to the teratological theory this change could not take place. If we admit this theory, no form of treatment would suffice to correct the perverted instincts. Now, if by education these results are obtained, it seems to

me this theory cannot be wholly tenable, and therefore I have asked for some explanation. Finally, with regard to the affinity between epilepsy and moral insanity, I have met with many cases of moral lunatics who had brothers and relatives epileptic; hence we see that the same morbid cause produces different effects; in one of the degenerates it presents itself under the form of moral insanity, and in another under that of epilepsy. This is what I wished to make known to the Congress.

Morselli. As to the cases of furious mania complicated with moral insanity, I shall say that there is nothing extraordinary in the fact; it is not marvelous that moral lunatics may become subject to excesses of mania. We know that this is in accord with the doctrines which I had the privilege of stating to the Congress this morning; it is in perfect accord with the theory by which we admit in paranoia the phenomena which we term episoidal. We know that epileptics constitute a group of individuals in close affinity with that of the moral insane, and that the latter are subject to accesses of mania under an episoidal form. No one wonders that in the moral insane also there are accesses of mania with fury, also of melancholy, and even in general paralysis, as has in some cases been verified.

It is admitted, since the researches of Magnan, that several forms which have the symptoms of mania with fury, may be united with the common form of moral insanity, thus developing a morbid acute form under the aspect of mania. This should contribute to the confirmation of the doctrine which we hold, that is to say, there are individuals who are invalids, deformed, who may become subject to diseases just the same as those to which persons normally constituted are subject; but in the early years these accesses will have special characters.

My second observation is a confirmation of the doctrine which I have stated: the researches of the anthropological school have demonstrated that there exist in children germs of moral insanity. But on this point I

offer some remarks, I might almost say, criticisms. If we should call germs of moral insanity those phenomena which constitute a transient episode in the normal evolution of the human sentiments, we might then say that children have also the germs of imbecility.

We have facts which prove that some little children have as much intelligence as imbecile adults; in the evolution of the affections, the sentiments, and the intellect, there are phases, and it is clear that the child passes through these phases, the education of social life, of the family, and of the surroundings, that operate so as to overturn the sentiments and affections, and then all are defaced. In those, on the contrary, in whom this anomaly of development is absent, and the organization of the nervous system has been definitely settled, these germs are but transient. The doctrine of Lombroso on this point, must therefore be modified, at least in my humble opinion, in the way I have indicated, that is, if there are germs of moral insanity, we ought to regard these phenomena as only a transitory phase of development in the history of a normally constituted individual, but as permanent in those in whom the development of the nervous system is anomalous and incomplete. This furnishes the explanation of the third objection respecting the bad ones; it would be absurd and ridiculous to hold that education does no good; we are the products of two factors, heredity, (that is atavism understood in the widest sense of the word,) and our surroundings; in a large number of individuals heredity predominates; in a very small number the surroundings prevail over heredity; the results depend on special circumstances; but is the problem modified by the fact that some of the bad ones have been successfully educated? It remains now to be seen whether they are successfully educated; Prof. Lombroso has profoundly studied the subject, but as regards reform of the bad ones, there still remains much to be said. We have an authority not to be suspected, Dr. Biffi, who is able to tell us what are the benefits of this education in the places in which the

small ones, wanting the moral sense, are confined; in general little or nothing is achieved by that which the optimistic doctrine would lead us to expect.

Finally, as to the fourth objection, relative to the hereditary affinity between epilepsy and moral insanity, there is nothing marvelous in the fact. We know that all forms of anomaly of development become combined, or they alternate; we know that from persons who were affected with psycho-neurosis, there come some idiots, from their births, and alcoholists with degenerative forms. Nobody denies the theory of heredity, for without it I could not comprehend the ideas of the modern school.

Brajon. I have related the fact of an individual who, before he was affected with moral insanity, had shown manifest mental alienation; his moral insanity was developed only in consequence of an access of furious mania, and his state has remained the same as it was at the outset.

Venturi. It does not appear to me to be necessary that Morselli should enquire whether moral insanity exists from birth up to puberty, in order to show that it is always congenital. The conception of Lombroso, that between moral insanity and epilepsy there is a family affinity, is derived from the fact, that, according to the researches of Laseque, epilepsy usually appears between the ages of eight and eighteen years; the child who is afterwards to become epileptic does not, before the age of eight, appear to be epileptic; now, among the various forms of epilepsy, there may be also that of moral insanity, therefore the fact that it is always manifested in the age of puberty does not at all exclude the idea that this moral insanity has not a congenital basis. I have desired by these words to contribute support to the opinion of Lombroso, and at the same time to calm Morselli, and to assure him, that even though there may be no cases of moral insanity in infancy, this does not signify that moral insanity could never have a congenital basis.

Buonomo, the President now left the chair, which was taken by the Vice-President.

He spoke as follows: It seems to me that this discussion on moral insanity is often conducted with ambiguities of meaning; we alienists, do not proceed according to the elementary principles which are unfolded in our science, in its serene, and I will say, altogether scientific field; rather indeed we proceed jumpingly. To undertake the examination of a case of moral insanity, when we are questioned on the subject before the Courts of Assize, after the moral fool has arrived at crime and at the tribunal, and then to take this type of criminal character and in it to display all our learning on the subject of moral insanity, all this, I say, constitutes an ambiguity. To me it appears that in so doing we are abstracting a special case from our whole bundle of so many cases, which represent our conception of the moral disorder of an individual; because if by moral insanity we understand a disorder which is manifested more or less in the moral field, it will not be the *degree* of the disorder that will indicate a different type, it will be, the *nature* of the disorder that will represent the type of the alteration with which we desire to occupy ourselves. One who rushes out, killing, ravishing and so forth, no one doubts is a moral madman; but another who commits such offences as do not bring him under public notice, or such as escape judicial investigation, do ye believe that he is less a moral fool than he who committed murder and rape, and has been arraigned at the assizes? Certainly not. The proper conception of moral insanity is simply that it is a perversion of the moral sense; magistrates do not interrogate us on the general subject, in extenso; they examine us as to the character of the case under their judgment, but we will view it thus only as a special case, as a single case of a whole series of moral disorders.

If then we would begin to confine ourselves within the domain of our own science, without also considering its

ultimate applications to the legal code, perhaps some discussions, which appear to be divergencies, might yet become elementary cognitions of our science, and perhaps there would be less disaccord. There are various moral disorders, and different degrees of these; not only are there different degrees, but the very same individual may have them in one single direction, and we may find one individual who is habitually, and very readily, inclined to some delinquency or fault, whether such as to bring him before the courts, or not. A person with such a disorder of his moral conceptions, when placed in a different position, may really appear to be a man of pure moral sense; in one field a hero, but in another a wretch for the gallows, or certainly a man deserving of reproach in the forum of moral conscience; and why? Because we easily construct lumping groups of the so-called mental faculties, when each of such groups has only to be split up into 'so many several parts, which when closely regarded, impress each individual with a special importance.

I therefore here repeat, begging pardon for so curious a phrase in this (!) hall, "before the judgment seat of God who will be justified?" I once heard this phrase, and it impressed me deeply, for many are the sins of moral sentiment which only the pure conscience can value justly; outside the conscience of one who feels these sins, or of one who may fall into any transgression whatever, every thing in these moments appears limpid and clear, very different from what transpires in the unfortunate one, who by the law of mental disturbance, commits an act which brings him to the scaffold. Moral insanity therefore, in general, in our scientific studies, not in those of legal appliance, is a disorder in the moral sentiments; and if, in these, disorders may arise, the passage therefrom to disorders of action is possible, and they are to be valued and judged of in relation to the degree of moral sense.

Let us first ask: is it inevitable that a disordered

moral sentiment shall fatally have its expression in an act? No. Sentiments and action are two different things, though they are connected. In our studies we often say: when we have more facts than are wont to harmonize, as there may be in each part, so there may also be disorder in the law of connexion, succession. We may therefore have moral disorder without a responding immoral action, and *vice versa*, we may have an immoral act corresponding to any moral disorder.

But to proceed more simply in my observations, I will say that moral insanity, or better, moral disorder, (for the term moral insanity gave place this morning to some serious observations by my friend Morselli), moral disorder, therefore say I, may consist in a disorder of the sentiments, without those consequent fatal acts which make it manifest, or it may lead to subsequent acts which are more or less immoral. How comes this genesis of action, from the sentiments? Actions are accompanied more or less by the internal sentiment which is wont to be the decisive incentive to action, an incentive which springs from the ideas, the intellect. We may then have an intellect that was sound in its origin, but on which there have been impressed certain conceptions, judgments, beliefs and so on; in other words we may have the conception of moral things and of immoral things, of justice and of injustice, of duty and of its opposite, but ideas do not rain down upon us haphazard from heaven, they come to us prepared, educated, from atavism; hence a consequence which has at length become a fact known to all, that is, that the moral sense is not that absolute, eternal sense, it has been usually styled, but on the contrary it is the product of the scientific, educative, evolution of civilization. None of us would call immoral a person of a certain civilization and a certain epoch, who eats the flesh of his elders. None of us would call immoral one who cohabits with his sister or his widowed mother, in another civilization and another epoch, and so on; this is not immorality, it is the conception, it is the

thought which prevails in that society and that epoch. And even nearer home, though we have not these classic examples, yet we have many examples of morality and immorality in the actions of those who live in a state of society different from that in which the others live; for though our society may boast of an ancient civilization and an ancient history, still it must deplore that dense and heavy stratum which, from antiquity, has lingered down to our modern civilization.

When, for example, (and it pains me to adduce as an example, a bad feature of my own city of Naples, but if I cite Naples I do not desire that any of you should cite bad examples from his country; yet, when the mask is taken off, every country is seen to have its plague spots in the order of ideas which I now announce,) when then, as I commenced to say, we have, low down, in a certain part of the city of Naples, into which the civil life, which is found in a higher order of society, has not yet penetrated, and when of this low stratum, people say, in a synthetic formula, *there* is born and *there* lives the *camorra*, look out for him, do you know what stands related to the intellectual life of his civilization? Ofttimes he is a hero; change the key to which this unfortunate beats time. If that note is struck to which the knife, or something more horrible responds, poor devil! Did he but know that near by there is another key, from which is diffused the loveliness of the new civilization, and did he but strike the note aright you would call him a hero, whom before you regarded as a horror, a bestial man, or even worse. And why so? Because ever since he was born, it has not been enough that we proclaim our more elevated society, and that we puff, and fling a ray of the light of civilization to him, for he has learned his own catechism, which has taught him that in the circle of his society, he who has recourse to force is respected; he is honored by his chums, when, on coming back in the night, he is able to detail those acts of prowess which we call infamous, but which, in

his society, are the badge of honor. When he says, I have had the misfortune to be captured by the police force, (and forget not that he knows force only, he has not any idea of civil life) I have been seized by a man of the law, who is now conducting me handcuffed through the crowded streets of Naples. Now pray look at him, he fears not the jail, he walks with head erect, just as Poerio and Settembrini and so many others did, when in the like dilemma they went to the Assize Court, and next to the gallows. The difference is that Poerio and the others had a conception homogeneous with our civilization, but these camorisi have a conception of honor and morality corresponding to an epoch very far distant from that of our blessed civilization.

[*Note by translator.* It is gratifying to find that the words, camorra and camoristo, do not appear in the Italian dictionaries now at hand; they are Spanish, the nearest English (or American) equivalent would be roughs, or toughs, or bowie knife experts].

Gentlemen, ye should see these heroes: they have their cigar in the mouth, they walk proudly, and when they reach the jail and meet their companions there, those who can narrate the greatest act of prowess, that is the most heinous outrage, are the most content; and when next he can say, "I will go back into society, and instead of the rank which I now have in the camorra, I shall mount to a higher," then are they satisfied, and this is exactly their career. Theirs is an intellect on which is impressed an idea different from that which civilization impresses on our minds; the camoristo is immoral in the intellect not from disease in it, but a vicious saturation of his ideas, conceptions, the education he has had, and the beliefs he has acquired; it is not a morbid disorder, it is with him a natural, physiological law.

If the magistrate asks us to account for these things, we, as psychological alienists, will reply to him; let him judge, let those judge who have to administer the law, how far a man's surroundings may draw him in one

direction or the other. Gentlemen, it is the idea which we should estimate. Consider for a little how the aspect of our own actions and of our own moral sense is transformed. If during the time of tyrannical governments, there were spies, and afterwards in the times of good government, we have such an abhorrence of spies, do you therefore believe that spies do not exist even now, in a state of society apparently superior?

We no longer have the deaf spies of the times of tyranny, but they have the same moral vice that they had in the times when they played the part of spies; the manner only, the external garb, is changed, and thus have we many would-be patriots whom we ought to condemn.

Therefore I say, there is indeed a moral disorder in the intellect, not from disease, but from the reasons I have given. We have disorder in moral acts, which is purely of the intellect, but from intellectual disease, as, for example in reasoning madness. Our illustrious President, Verga, said: "Moral insanity is a fact, it may be a case of reasoning madness, but not all reasoning madness is moral insanity." This is true, when there is a just, considerate and well-proportioned intelligence of things, and when things are taken in their proper substantiality and their proper qualities, each complete in itself, and the relations between things and ideas are also taken in just proportion, we never then reach reasoning mania; *vice versa*, when, with forms often very brilliant, and flashes of light which seem to emanate from genius, though in reality, from natural mental conditions, a subject is not embraced in that totality in which its essence consists; when, in the relation between things differing much from each other, one sole part in them suffices to establish a complete relation, (hence come those strange colossal, paradoxical forms); and when, as is popularly said, the mind is *not square*, and its brightness is not conjoined with due proportion and measure, we shall then have a form of moral insanity in which there is lucidity and genius, but there is a sad disconnection of the parts. Therefore from

reasoning mania, there may proceed, as a logical consequence, errors in the sentiments and actions.

And here I will say, that in reasoning mania the immoral acts which may result from it may be such as to bring the parties into the criminal courts, or not reaching this point, they may be of such a character as to render the authors of them unfit for society, and therefore deserving to be shunned; for if permitted to enter they always do harm; they have felt evil contact and bad influences; they do not, it is true, commit offences legally criminal, but anti-civil ones, which disturb society; they calumniate and do all sorts of mischief. The question here, in the difference, is not as to essence, but as to degree; and whence comes this difference? It comes in both cases from the intellect. Some of these persons become forgers, others commit various offences; the forms may be ever so various.

Next to the intellect, I regard the sentiment; if it represents a moving agency, differing from the others, in our mental organization, it is natural that, as we have had an alteration in the intellect and diverse parts of the same intellect, so we may have an alteration in the moral sense. Well then, since our sentiments are of so many sorts, it may happen that an individual may have disorder in certain sentiments, or there may be a want or a perversion of certain sentiments, but not of them all; sometimes indeed, the disorder actually consists in an excess of some sentiment which overrules the others, instead of keeping its own proper place. What happens then? Sometimes the sentiments, though disordinate, are innocuous: for example, a person may not have a fine æsthetic sense; again a person may have a disturbed sentiment, or some may be wanting, but this is not immorality, another may have the auditive sense deficient, or it may be absent, whilst our honorable colleague Vigna has it so sublime, that he is delighted when he can talk a whole night with Verdi.

There are sentiments which have nothing to do with morality. It is necessary to study the sentiments separately,

making each of them the object of observance by itself, and the relations which arise between them. Take a person in society, and a person studied apart from it, closely and profoundly; there are some (and I know many examples) who, in society and in familiar conversations, pass for gentlemen, by an *autono-masia* (*id. est, par complaisance*), but if you could see one of these in the actions of his habitual life, and sound him deeply, you would say to yourselves: Is this person really a gentleman? Are his sentiments in true accord with the moral law? are those which he expresses really his own, or does he fail, (who can tell why?) to manifest what is in his heart? Here I may fitly repeat: "Before the judgment seat of God who will be justified?"

In fact, should you have a fair opportunity for discovering the whole of his conduct, you would be constrained to admit that he was not the gentleman whom all had believed him to be. There is in him a moral disorder, without manifestations of acts; but then, is he less a moral fool than the other, who, with alterations in the moral sense, commits criminal acts? Before the bar of science, the moral sense of both these persons will be judged as altered. Our sentiments are therefore distinct from our actions; our ideas represent the energy which precedes action; from the stimulus which our different sentiments and ideas produce on the motor centres, proceed human actions which are at one time simple movements, and at another time, in one way or another, co-ordinate movements. But are all the centres, equally, and in the same manner, excitable in each of us? Certainly not. Halting even at that stage which does not overpass the limits of physiology, we may see one who stretches himself out like a lazy lubber, and again another who cannot be quiet, or stand still, for a moment: what does this signify? it signifies a different excitability. And here I add that there may be not only a different excitability, according to different individuals, but also in one and the same individual a different excitability in the

different motor centres; we may have some one who, though slow in some movements, is very lively in some others, because the stimuli which reach some of his motor centres are more effective than those reaching others. The illustrious Verdi said, when talking privately with the ever to be lamented Sella, in parliament, that he did not seek for sounds in order to compose music; sometimes a sound gave to his mind the idea of a harmony all at once, or of a composition, and under this impression he wrote it out; let some other person hear a tune, and even though he comprehends it, he will be content to say, it is very fine, I like it; and he may name it, but it never in him awakes the idea of a complete harmony.

What now may happen? Disordered ideas and sentiments may be found in a person who is but slightly excitable; it is not likely that he will have to appear before the Assize Court; they may on the other hand, in a different person, be very exciting, and then, the first that is presented to his mind suffices, without time for reflecting, comparing or duly estimating, to produce, instantly, excitement in the motor centres of action. What then happens? Sometimes this excitement is held within those nearly physiological limits which constitute what is usually called the nervous temperament of an individual, so that some distinguished persons reply to a courteous enquiry rudely, and presently beg our pardon. Sometimes, on the contrary, the excitability is morbid, and then according to the more or less excitable condition of the centres, which they have in association, or each has in itself, we may have a different action. Then we have the epileptics; but who does not know that the epileptic is subject to terrible outbreaks of nervous movements, whether in the convulsive form (which is the ultimate stage), or, in explosions of great excitability, resulting in movements? It is therefore but too true that we must find moral lunatics in the group of the epileptics; or there may be epileptics of

every clinical, or as I might almost say, every somatic form of epilepsy; or without the perfect characteristics of the clinical form, they may stand in close neighborhood with epilepsy, that is, they may present an augmenting excitability, which will afterwards reach the highest degree. I therefore very willingly accept the statement, that there is a great analogy between the violent acts of moral lunatics and those of epileptics, whether the latter may be complete epileptics or such as stand yet outside the portal of the last stage of the malady.

But should we, for all this, confound moral insanity with epilepsy? Not at all; for in the first place moral insanity does not always reach those excesses of instantaneous, violent acts which epilepsy presents; moral lunatics often act quietly and with determination, as, for example, when one of them forges a name, or a public document, and so forth; what see ye in such a case like the outbursts of the violence of epileptics? Nothing whatever; another remark I would offer; it is that among the perpetrators of violent acts there may be more moral lunatics, than there are among epileptics, or among those who have, as I would say, the epileptic constitution.

Just as, after our studies of general pathology, we proceed to apply our general rules to individual clinical cases, so, when we may be called into the courts, should we apply the several parts of our science to any special case. No morbid type is so described that, in all its parts, it may be identified with each special case; in our interpretation of moral insanities, we must be guided by general pathology and psychiatric science.

Now I hasten to close. I heard congenital and non-congenital insanity spoken of. Now, as for myself, the general rule is that disorder of the moral sentiments is congenital, but it is not always so; at first it is moral disorder that leads to those immoral acts which belong not to pathology, but to sociology; it is then very necessary that we should correctly understand what the terms congenital moral insanity and acquired moral in-

sanity signify; it has been said that moral insanity does not appear in early youth, but that it comes afterwards; this is natural, we know it; being congenital does not mean that the subjects of the malady even *in utero*, or from their first day of life, must have had the stigmata of insanity already imprinted on them; we understand that gradually during their development, the intensity of the affection and the proportional nutrition of the parts of the system may become altered.

But can there be an acquired moral insanity? Certainly so. We can understand how this may happen. For example, after mania there remains, if not an active morbid process, yet an indelible alteration, a quasi cicatrice, from the nutritive disturbance that had preceded; here we have an individual who has acquired a condition which, though no longer a morbid process, is yet a systemic something in his organism, a quasi cicatrice, and this person becomes a moral lunatic.

I beg pardon if I have talked too long, and now I stop.

Tamburini. I desire only to call attention to one fact which has been cited by the distinguished Prof. Buonomo; it is that of the relativity of insanity, the fact that acts, such as incest, etc., which are normal among savage and inferior races, appear now to us as immoral and criminal. This fact, it seems to me, is a proof of the atavic theory of moral insanity, because there is in the moral lunatic, the reproduction of acts which are in perfect harmony with the social constitution of savage races.

But though we may accept the conception of the atavic nature of moral insanity, we cannot equally accept that conception which has been this morning expressed by Prof. Morselli respecting moral insanity, that is, that moral insanity is a fact which lies completely outside the field of psychiatry (as a fact exclusively teratological and not at all pathological) and that it is of a purely sociological order. I recognise the very great importance of moral insanity (and all with me recognise it) in the field

of sociology, but I do not think it can be absolutely accepted that moral insanity can be completely excluded from the field of psychiatric pathology.

Let us take first of all those cases of moral insanity which are fully accepted and well known; we shall find, in the majority of the well-known moral insane, whose histories have been recently detailed, anatomical degenerative characters, and many functional facts, which are decidedly pathological, as, among others, that very high excitability to which Prof. Buonomo has just now alluded. The very fact of the great frequency of epilepsy among the moral insane, really proves the pathological nature of the affection. Finally also, the great frequency with which the congenital moral insane become afterwards the subjects of other maladies, (and I have recently reported one of these in treating of a typical case of moral insanity in a person who was often subject to accesses of mental change), this fact, I say, is a confirmation of the partly pathological nature of moral insanity.

There is yet another observation. It is said: Moral insanity is an arrest of development, it is a teratological fact, but imbecility also, idiotism also, is an arrest of development; these are teratological facts, accompanied by atavic characters, and why then do we not say that these facts have the right to be styled sociological? It appears to me indeed that it would be more correct (if we now admit moral insanity in congenital cases only) to abandon, as many of us do, the denomination *moral insanity*, and always to call these cases moral imbecility, or moral idiotism; and so much the more as those anatomical and functional characters are conjoined with them, which are also present in the idiot and the imbecile.

Buonomo. I shall say only a few words. As regards atavism, first of all I shall say that it is quite unnecessary to exaggerate its extent and influence; but do not believe that atavism is the whole; for example, I know that the experiment has been made of taking a child born of an unfortunate insane mother, and putting it

under education ; it appears never to have attained an education corresponding to the state of our civilization ; it reached a certain point, and there its education stopped ; but I do not know whether that child, if admitted into our company, would manifest the instinct of biting or eating us ; I believe there is much acquired in the immediate social customs ; I say this that we may keep our ideas always within their just limits.

I have heard Prof. Tamburini make some observations on moral insanity, proposing to substitute for this term, moral idiotism or imbecility. I use the term which was written in the order of the day, in order to comprehend in one broad and generic denomination various cases, because I have already said that the moral disorder may be a moral disorder in the sentiments alone, or a moral disorder accompanied by acts which amount to crime, and hence the great variety of forms. As to idiotism, or moral imbecility, I would say, the question is rather to find a word still less significative, as has been done with that which is called mesmerism, somnambulism, hypnotism, exactly because there is not included in these words any theory ; but of this I do not wish to say more. Rather would I ask, is it a disease or not a disease ? Here is the discussion which has been raised by the honorable Morselli. The facts may be compared to the gradation of light between one hemisphere and the other ; where disease ends, and where alteration begins, are things that remain a little uncertain, it is the dawn between day and night. But I think these things are after all not very substantial. I have no more to say.

Morselli. The remark which I would make responds in part to the observations of Prof. Tamburini. If we turn to the literature of moral insanity, we see that the greater part of it has been contributed by the physicians of prisons and by writers on prison subjects. The moral lunatics who enter asylums may be counted on the fingers. Everybody knows this ; on the contrary those who fill the houses of seclusion, the penal prisons and the jails,

constitute the immense majority of this sad class. This is evidently a practical reply to all the objections that can be made to the idea expressed by me this morning. The very rarity of moral insanity in asylums, and the evolution of social demands, in consequence of which our asylums in general admit not the moral insane, who pass into jails, serve to demonstrate the truth of the doctrine of the criminal anthropological school. The moral lunatic is born a delinquent; that is, individuals affected with moral insanity (or, if you prefer to modify the term), with congenital delinquency or a criminal psychosis constitute a special group, characterised by congenital deficiency of the moral sense.

As respects the degenerative characters, they have not been studied by asylum alienists, but by those who have had the opportunity of studying them in prisons; and among these investigators it gratifies me to name my friend Dr. Virgilio, who has studied it, not among the insane of his splendid asylum, but among the delinquents whom he had the opportunity of observing closely in his own city.

The degenerative characters must be sought for in those individuals who neuro-pathologically deviate from the normal type. And here, as regards these characters, I feel obliged to say that confusion has often arisen; all those characters which depart from the normal type have *en masse* been called degenerative. I think that on this point much might be said; there are some deviations in the cranium which are not at all of a degenerative nature, but are pathological, for example plagiocephale (skull twisted sideways). At this point it is evident that we enter into the question whether moral insanity ought to be considered from a teratological or a pathological point of view. I insist on the opinion expressed by me this morning, that is, on considering moral insanity as a teratological fact, precisely as is imbecility. Moral insanity is not a disease, unless we designate as a disease a functional deviation of the moral organism, which has

reached the fullness of its development; disease has characters different from those of infirmity; an individual born blind or deaf, in consequence of arrest of development in the organs of sight or hearing, is not a diseased person, he is an infirm one; he who is born devoid of the moral sense, because of an anomaly in the development of the nervous centres, which is yet unknown, but which may in course of time be discovered, is not a diseased person, he is an infirm one, a monster, or an anomaly. That, on this basis of deficiency, invalidity, congenital weakness, atrophy of the nervous system, some pathological forms may be developed more readily than on a sounder foundation, we all know; he who is born weak and infirm, and he who is born badly formed in consequence of an arrest of development, which happened in the embryological, foetal or infantile period, presents in greater number, and with more frequency, those pathological characters which should on no account be confounded with the degenerative characters. Entertaining these views I would propose that we leave the question just where we found it. Nine years have now passed since the question of moral insanity was handed down from one congress to another—(certainly no trivial bequest)—and I see that we are now almost at the same point as when we started.

He who accepts the doctrine of the anthropological school, by which moral insanity is regarded as purely a congenital debility, a teratological form of moral development, has already formed his conceptions, and he certainly cannot recede from them so long as it is not clearly demonstrated that perversion of the moral sense is synonymous with deficiency of the moral sense. The question will be solved when medical alienists shall have entered the penal establishments, wherein moral lunatics reside, and when they shall there have studied them, and from an enormous number of facts they will be enabled to conclude that there is a class of persons, who, as the young school to which I have the honor of belonging,

has proved, are born, whether as the result of heredity, or other unknown cause, predisposed to a deficient development of the nervous centres.

I believe that the question cannot be solved by any congress. Congress leaves our opinions as it finds them; it cannot change the opinions of any one; the same thing happens in parliaments, and still more in congresses, in which the discussion almost always turns on facts of personal observation.

Until the experience of each shall have conglobated the experience of all our colleagues, we cannot change opinion; it is possible that a time may come when I shall change mine, and it is also possible that others also may change theirs, but at all events, it must be facts that will show who is right and who is wrong, it is from the conscientious and clinical study of cases that the solution of the problem will be reached.

The discussion, which was suspended on the 20th of September, was resumed in the forenoon session of September 20th, when the champion of the anthropological criminal school, Lombroso, put in appearance and took the floor. He spoke as follows:

"I ask pardon when I presume to speak, seeing that I am only a guest, and almost a stranger to the society; but it is imperative on me to speak, lest it might be said of me that *I refused from cowardice*. The subject treated of is one to which I have devoted a great part of my life, and if I should not speak when it is under discussion, it might be said that I have not the courage to do battle with the forces of the opponents here assembled ——"

President. Oh never say that—

Lombroso, —— and they have spoken with so much sense before me. There are two principal objections. With one of these (that of Michetti) I think I need not trouble you, because it is merely metaphysical, and these do not enter into the studies which should engage alienists. Next are the grave objections of our illustrious

President, Senator Verga, who, strong in his own powerful genius, has done as did Charles the Happy of Piedmont, when, on returning to the throne, he erased all the names that had been inscribed in the interregnum of 16 years; he has forgotten that from the time when he, the first in Italy, popularised the question of moral insanity, and with it faced the judges, who first ridiculed, and afterwards had to accept it, he has, I say, forgotten that since that time two generations have been born, one more robust than the other, among whom I rejoice to name *Virgilio*, our great patriarch, then Tamburini, Morselli, Tanzi, Frigerio, Ferri, (who has carried it into the field of jurisprudence in the university of this city), Krafft-Ebing, Kraopelin, Mendel and Sommer.

To these authors, and in a small part to myself, are due the clinical and anatomical lines of moral insanity. Before they spoke out the judges used to say, "We also are capable of judging, without fail, whether the prisoner is a lunatic."

I have advanced a step yet further in studying the functional anomalies by means of clinical methods, and the psychical and anatomical analogies by observations on delinquent man. If the conception of moral insanity has taken the field in science, it is due to two monographs, one by Tamburini and the other by Morselli, who have delivered two very characteristic types (Sbrocco and Grandi), on which it was easy to me and to some others to remodel all that they had sought out in born delinquents; and then a strange thing happened, which I must here relate, because such anecdotes end by convincing. I studied during 15 years in order to find the difference between the delinquent and the lunatic. In studying the characters of the delinquent I thought I found a difference from the moral lunatic; when afterwards I found myself fronting the delineations furnished by Tamburini and Morselli, in their monographs, I saw that my own picture was a copy of theirs. I experienced some difficulty in making the comparison, because when two things

are identical they present no material differences; this was one of the reasons why the clinical characters of moral insanity had to struggle so long, in order to gain admittance into the world. All the clinical characters of moral insanity are certainly not those of connate delinquency; for example, there may be alcoholist moral fools, there may be moral fools with genius, and altruistic moral fools, in fact all sorts; among all these forms we have the criminal one, that is, the form of the born delinquent, which is exhibited in hospitals and prisons, and has characters that cannot be mistaken; as, the big lower jaw, the outstretched ears, the projecting face, the retreating forehead, and above all, that which is most interesting, the very conspicuous clinical characters, which, I believe I have myself had the merit of bringing to light, and to me it seems strange that these should have been forgotten in a discussion in which physicians spoke; for example, the sensory obtuseness, analgesia, left-handedness, muscular agility, great development and robust form of the body, (which has been one of the greatest difficulties in the way of moral insanity in obtaining entrance into the minds of judges, as they cannot conceive how an apparently sound and robust individual can be diseased); another character which we found, with a certain prominence, was the precocious development of the person at 14 and 15 years of age, also the precocious sexual development, the sphygmographic insensibility, daltonism, etc. Mondo thinks that because we are much engaged with the skull, we have lost sight of the psychical characters, but this is not the fact. The first thing which I would now demonstrate is that cruelty does not predominate in the insane criminal so much as impetuosity, emotivity, an exaggerated outbreak and the contrast between the various manifestations of the character; men who on one day are so good as to be benevolent even to animals, and will risk their own lives to save a cat, may next day see their own children dying of hunger whilst they take pleasure in torturing them, and eat

ravenously themselves whilst their children are starving; these persons all have their good hours, but in the other forms of insanity these do not come; this fact is very well known in prisons; another character is their great irascibility and its intermissions; their intelligence is sometimes in excess, and sometimes scanty, but it is always unequal and preoccupied with the present moment, and when it is absent it is substituted by cunning. I would here parenthetically say that I do not find myself in perfect accord with my friend Morselli, (to whom I owe my warm thanks for his courageous defence of the criminal anthropological school), in the belief that moral insanity is altogether a teratological fact; there is in it a pathological part; the scleroses, asymmetries, cardiac affections, etc., so frequent in these individuals, are pathological facts. We also admit that there are some forms of acquired moral insanity, for example, from typhoid fevers, wounds and alcoholism.

I desire now to consider the grave objection of Prof. Buonomo. He said, if I am not mistaken; "you cannot calculate surrounding influences, you cannot calculate what individuals who become criminal, might, under other circumstances, have become heroes." But we have never denied this. We have always admitted that there is a class of delinquents who become such from surrounding influences; but let us well understand ourselves; this is not the deeply marked, teratological delinquency which we meet with in the delinquent born type; on the contrary it is that which we call the delinquency of occasion, which is indeed a born delinquency, but much less intense. In order better to explain myself, since there might here appear a great contradiction, I mention the fact, which we first stated in the midst of universal derision, now however at an end, that the child is born a delinquent. We who are always adorers of children, fail to perceive this; it is necessary to study them intimately, profoundly, in order to see how soon they forget the mother after her death, how they forget benefits

received, how egotistic, envious, and cruel they are, to see how they divert themselves in plucking feathers out of birds, and inflicting a thousand other tortures on animals,—we must see all this in order to understand their delinquency; but after the powerful out-wrenching effected by education, there comes an epoch, between 7 and 14 years of age, in which this born delinquent becomes a more or less normal person. But if he remains uneducated, then he who might have become an honest man, will be a criminal by habit and occasion, but much less ferocious and persistent than the born criminal.

[*Note by Translator.*—In a former part of this discussion we had occasion to express our hesitation to accept, as canonical, the assertion of Dr. Brajon, that all young children (*bambini*) have evil tendencies, instinctive perversions, etc., etc. That Prof. Lombroso and he ever amused themselves in plucking living birds we venture not to believe, despite the fact that they are now “birds of the same feather.” If they are right in their depictions of the moral (*i. e.* immoral) tendencies of childhood, how great must have been the error of that teacher who said, “Suffer the little children to come unto me, for of such is the Kingdom of Heaven!” Will Professor Lombroso or Dr. Brajon have the goodness to inform us whether the little children (*bambini*) embraced by Jesus had been duly *educated*, before he embraced them,—that they had undergone that *forte stortilatura* which Prof. Lombroso deems indispensable to transform these bird pluckers into humane bipeds? He uses the generic term *il bambino*. Dr. Brajon is more explicit, though not more comprehensive; his words are “*tutti i bambini*,” that is, the whole crowd, his own children, Prof. Lombroso’s children, all the world’s children! Jesus taught that “a good tree bringeth forth good fruit.” Italian mothers! will ye not rebuke these men of Herod? Have ye hearts of flesh, or of stone?]

But if he is really a moral lunatic, then no education avails, or it will give him merely a surface tinge. Which of us is aware that he was, in the early stages of his own de-

velopment, a reptile, or an insect? Just so in moral insanity; if the education is vigorous, and in every sense well directed; and if it overpowers the germs of delinquency, who would any longer think of that embryonal delinquency, which was once his heritage? we now call him not a born delinquent, but a pseudo-born delinquent. (This passage is very obscure; it probably has been imperfectly reported, or erroneously printed.)

“This does not contradict our theory; quite the contrary.

We admit also another fact; it is this, if the born delinquent has always advantages in favor of morality, and is never placed in positions that may draw him into immorality, in many cases delinquency will not be exhibited; there are moral fools in the world and in families, whom no one recognises as such, because they are rich, because their learning and their polite manners conceal them; but it is necessary to be their servants, in order to know the jeers and the harshness with which they repay good deeds; we would require to be their intimate friends, or secretaries in order to know all the harm done by them; in them education has covered their natal delinquency, and has led them into a form which society does not regard as criminal, but as an artifice or vice. There are, too, some, (as I have not a seat in parliament, I have no reserve, and I can speak frankly), there are some diplomats and politicians, who owe their popular influence and their parliamentary position to their native delinquency, which has taken this form.

The advocate Laschi and myself are studying political crime; we have been forced to admit that some part in revolutions is due to transformed native delinquency; there are at present in Bulgaria and Servia ragamuffins who make a trade of politics; if they succeed in turning out a ministry, they may themselves become ministers; they will then no longer be called native delinquents, yet they will always be such in the opinion of alienists.

But I must return to the subject of the relation

between moral insanity and epilepsy; and here is another confession. I was a thousand miles from dreaming that epilepsy had any relation with congenital delinquency; I found myself two or three times in contact, and I was not aware of them; I was studying the case of Misdea, in which I had for associate our illustrious colleague Bianchi, one of our real scientific notabilities, and although the case was one which might have awakened the mind of any one, it did not awaken mine; I found that there was a great analogy, but I did not discover a complete affinity, that affinity which I had found between moral insanity and native delinquency.

One day I went to examine my statistics on median occipital fossas, for the purpose of using the figures in a work on which I was then engaged, and I found before me 16 per cent. of occipital median fossas in delinquents. I compared these figures with those of epileptics, and I found the very same proportion. This was as a ray of light projected into the darkness, and then I said to myself: "there must here be a relation," so I set to, to study the craniology of epileptics,—a labor in which I was preceded by Amadei; who may now affirm that everything he has related on the craniology of epileptics exactly accords with what I found in delinquents.

I must now request the congress to observe that in the exposition made by our distinguished colleague Funaioli, on nine skulls of epileptics, the type of the born delinquent is reproduced. I mention especially the numbers 80, 92, 53; the osseous sclerosis is enormous, the parietal sinuses and the lower jaw are voluminous, the asymmetry is remarkable; the weight of these bones is great; and see how many other anomalies there are, for example the over-riding teeth and the whole series of anomalies that I had met with, which are of such a character as to render it impossible to deny the perfect identity. We had observed in moral lunatics the facial asymmetry, the twisted cranium, and the prominence of the frontal sinuses; well, we found just the same in

epileptics, and in both all the other characters, as, the very large lower jaw, the inequality of the pupils, strabismus, the remarkable size of the body (we all know that many epileptics are very robust, their weight is equal to that of delinquents and sometimes even greater); then there are the sexual precocity, the tendency to alcoholic abuse, the great agility of the limbs, daltonism, left-handedness, the small frontal brain, and above all the anomalies in the moral character; I need not tell alienists, for all know it, that the character of delinquent epileptics is so woful that it is necessary to keep them more isolated than others; another fact common in both delinquents and epileptics, is, that whilst other insane persons willingly live apart from the rest, they love company, and they torment one another. Another characteristic fact, which we owe to Frigerio, Bianchi and Tonnini, is that not the head alone is asymmetrical, but likewise other parts. Tonnini has found also that there is a difference of temperature in the two sides of the body, and of sensibility in them, so that they almost seem to be distinct halves; I had never thought of this condition in epileptics when I noted that one of the salient characters of moral insanity was lateralism, or, so to speak, sensory left-handedness, that is, more sensibility on one side than on the other, and signally so on the left; the same fact obtained with regard to motility. Recalling to mind the facts recently stated by Abundo, of Naples, and Oserezhowski (*Medic. Obosrenije, 1885*), which exactly correspond to those found by Tonnini and Venturi, I observed that, in the same proportions, there was a diminution in the acoustic and visual sensibilities, both in epileptics and delinquents.

I pass on now from the physical part, and I shall speak of the moral part only. These persons are very cruel, they frequently are cannibals; we all know of cases of cannibalism in epileptics, *e. g.* that reported by Adriani, of one who bit the shoulder of a man, and wished to eat a child, after he was captured. There are

however some very good epileptics, but not very many, as Tonnini has shown; and even the best of them are always mentally changed; and as they are readily excited, they from time to time exaggerate things, and fall into excesses.

Must I speak of causes? Verily the causes are absolutely identical. It is true that among the moral causes fright contributes the greater proportion to epilepsy, but then we have alcoholism in the parents, which also gives so many delinquents and so many epileptics; we have epilepsy in the parents themselves, which gives so many epileptics and so many moral fools; and then also injuries to the head; many born delinquents have this injury, 26 to 28 per cent. of them, and this injury is also found in many cases, in which the epilepsy was not accompanied by the degenerative characters which I have mentioned.

There is another fact, which has been recently made known by our colleague Morro, and confirmed by Dr. Canger; it is that of the advanced age of the parents, but especially of the fathers, which contributes a remarkable number of epileptics and delinquents. Another fact not devoid of importance, and pretty well known, is the geographical distribution of epilepsy. Morselli and Sormanni have constructed a geographical map of epilepsy, which has impressed on me the fact that some provinces which have the greatest number of epileptics, have also the greatest number of homicides; I have had this map reconstructed by Dr. Rossi; it is most accurate, and it has been illustrated by the statistics of the commissioner Bodio. Very well, I have found in 69 provinces only 23 exceptions to the law of proportion between the number of those committing homicide, rape and other violent acts, and the number of epileptics; in other words, I have found that those provinces which had the greatest number of epileptics had also the greatest number of homicides; and those which had the least, had also the least number of homicides; Sondrio, Bergamo, Como and

Porto Maurizio were exceptions, because cretinism there opens the door to a greater number of epileptics; Forli and Ravenna escaped merely because of error in their figures, for popular intelligence is there very watchful, but criminality is in greater proportion than elsewhere. An anecdote may here be of service to me: some days ago, I was expressing to a prisoner of 21 years of age, my surprise that at so early an age he had already been seven times convicted; his reply was "O, but I am from Forli!"

You will now ask me, what conclusion do I wish you to draw from all this? Is it that moral insanity is a motor epilepsy? Here it is where the error begins. I reject the idea that the epileptoid, the born delinquent, is always an individual who writhes in convulsions (I bear in mind that I am speaking for the benefit of the public, who are unable to see epilepsy without convulsions, but when we use the word, we understand an irritation, followed by a discharge from certain cerebral zones which are especially designated epileptogenous); but when the zones outside the epileptogenous are unaffected, we no longer see the motor phenomenon; we then have vertigoes, habitual crime, or moral insanity.

I now repeat it, that when we speak of epilepsy, we do not mean merely convulsive epilepsy, we desire to say that since the field of epilepsy has, by the labors of numerous authors, been enlarged to such an extent as to embrace even a distress of breathing, or a racking head-pain, which arises suddenly, and has intermissions, in a degenerate individual, or one who has suffered an injury, etc., etc., suspicion of epilepsy is aroused, so that epilepsy has now attained an extraordinary number of forms and varieties, which were never before imagined; in like manner, there is, as we think, a psychosis which is almost always congenital, sometimes acquired, for example, from typhoid, sunstroke, or other causes, though rarely, and it belongs to the great group of the epilepsies.

With this we have now completed the edifice, or at least have given the outlines for the completion of that

edifice, on which we are attempting the reconstruction of the delinquent man, so far as we have found pathological and atavistic phenomena. It is unnecessary to demonstrate atavism in epilepsy; when the epileptic mews like a cat, barks as a dog, bites, drinks blood, creeps on all-fours and licks the dust, we have a reproduction of the phenomena, not only of savage races, but even of the lower animals. When, besides, we have other phenomena, such as asymmetry, tremor, daltonism, tactile obtusity, we no longer have atavistic, but pathological phenomena, and here we may comprehend the fact that moral insanity may, at the same time, be both an atavistic and a pathological phenomenon.

Verga, A. I am rejoiced to find that in the main, if I have rightly understood, Prof. Lombroso and I are in accord. If he had been present at our first discussion on the subject, he would have perceived that I reduced all forms of moral insanity to two. I said that in the first form the individual was without the moral sense; he did not feel, he did not see what is just and what is unjust, what is right and what is wrong, what is lawful and what is unlawful; some call this *moral daltonism*, others call it *moral imbecility*, and others again *congenital delinquency*. These individuals do not know right and wrong, they do things without considering their importance, and they even wonder why others laugh at what they do, or blame them for it. Apropos to this, I remember a girl of good family, who was addicted to prostitution; she came to me one day to complain of a cousin who had reproved her for it, whilst, as she said, she honestly gained her living. Here was a case of *moral imbecility*.

I next admitted another form, in which the individual understands wrong; he knows he does wrong, and he deplores it; but there come over him certain eclipses, under which he is forced to do wrong, and cannot help it. The bad acts committed under this second form, I call cases of *larvato epilepsy*.

Admitting these two forms, it appears to me that in

great part I am in accord with Prof. Lombroso. That which appears to me important to decide, and which was the object of the discussion which was proposed in the Congress of Voghera, was the establishment of criteria enabling us to say: "In this case there is moral insanity, or in this other there is, on the contrary, simulated insanity." I do not allude to simulated insanity in the sense in which Michetti understood it, for that has no existence. It would be too easy to cheat justice, by saying that they were irresistibly dragged into crime; lawyers would know too well how to play their game; they would discover insanity in every culprit. What is to be done is to learn the characters by which we may be enabled to testify when there is moral insanity, and when there is not. It appears to me that they are to be found (at least so far as up to the present they can be established), in the following three conditions, and here also I seem to be in accord with Lombroso. The first is the existence of certain mental maladies in the parents; the second consists in the numerous degenerative characters in the individual; these characters may be atavic, or they may be particular, born with the individual, though not inherited; and among these I admitted many of those characters which Lombroso has established, as, asymmetry of the face and the rest of the body, anomalies of the cranium, abasement of sensibility, nervous tics, convulsions, etc. Finally, a fact which should be well considered, is the complete want of relation between the act and its cause, and the incorrigibility of the accused.

It appears to me, that in these few ideas which I have expressed, or better to say, which I have repeated, for I before expressed them in another session, there is a great analogy with the manner of thinking exhibited by Prof. Lombroso.

Tamburini. I have, with pleasure, heard, from the chief of the criminal anthropological school, confirmation of the conception upheld by me in another session, as to the pathological nature of moral insanity, when I made some

objections to Morselli; exactly because the clinical characters which he so extensively related, are a confirmation of the pathological nature of this malady, which Morselli in a certain way excluded from the psychiatric field. It has also pleased me to hear that Prof. Lombroso does not insist, in a precise manner, on the conception of the absolute indentification of moral insanity with epilepsy, for though I fully accept the very luminous conception, which clears up so many facts, of the absolute identity between moral insanity and congenital delinquency, a conception of the very highest importance because also of its medico-legal bearings, yet, I cannot in like manner, accept that of a complete identity between moral insanity and congenital delinquency on one side, and epilepsy on the other. To me indeed identity between two states implies that there must be a correlation so absolute that what is verified in the one should be constantly verified in the other. This I find on comparing all the clinical cases of moral insanity, which have been described by alienists, as well as by medical legists, with the cases of congenital delinquency yet described by the criminal anthropologists; but I do not find the like in comparing the cases of moral insanity with those of epilepsy, and it really seems to me that Professor Lombroso this morning had reference to the analogy between moral insanity and epilepsy, rather than to an identity; I think we are all inclined to admit these analogies, but a perfect identity cannot be accepted. On the other hand, it is also to be observed that, taking certain common characters, such as anomalies of the cranium and the face, inequality of the pupils, etc., many mental maladies might be identified among these, and very many diseases ought then to be founded in epilepsy; thus, hysteria, which in many cases coincides with moral insanity, might also be identified with epilepsy; yesterday we heard a quasi identity between transitory mania and epilepsy spoken of; the *raptus melancholicus* will next have to be regarded as epilepsy.

Buonomo. It has appeared to me that the question, as

we have been treating it, is a practical one; the true expression of it should, as I think, be this: "is it, or is it not, true that certain individuals have perversion, disturbance, or disorder of the moral sentiments, apart from other mental defects?" Here is our first question. On one thing I think we are all agreed, viz., that there may exist in an individual, disorder of the moral sentiments, either from the lowness of these sentiments, as in imbecility, or from an excess in one of them over the others; (in this latter case it does not seem to me that moral insanity should be called imbecility). This moral disorder is sometimes manifested in acts, and at other times it is not so manifested, but not for this reason is it a less real immorality of the sentiments, in accordance with the conception of it which we should hold. There may be many reasons for its non-manifestation in acts; I, however confine myself to one of these reasons, which is, that between the ideas and sentiments of an individual, and the acts to which he abandons himself, there is a connexion, a correlation; this connexion, this nervous passage between a centre of ideas and sentiments, and a centre of acts, may often be modified, interrupted, or disturbed, (this is very often observed), and then no action occurs, because the idea fails to stimulate to acts a centre that is but little excitable.

There may be another case; the centres of movements and acts may be very excitable, and then there may be a long series of degrees in the excitability, and delinquency may result, which in this instance means the existence of a moral disorder that displays itself in aggressive excesses. But to be a moral lunatic is it necessary that together with disorder of the moral sentiments there should be excitation to movements, to actions, and that this excitation should be as great as it is in epilepsy? For my part I say no. There may be moral lunatics who do not properly belong to that form which impels an individual to commit such acts as bring the offender into the criminal court. When there is not a clinical epileptic

form (for if we do not trust to something clinical we shall, as Tamburini has before said, confound mental diseases with epilepsy),—when, as I was saying, there is not a clinical epileptic form, but instead of this an epileptoid excitability, we have a moral lunatic who, instead of having unconscious impulses, catches the first image that crosses his mind; right or wrong he believes himself injured, right or wrong he believes himself despised; but there is a psychical reason, a moral reason, for which he ordinarily commits crime, differently from the true epileptic, who attacks and offends without any reason. The epileptic offender is not a moral lunatic, because, when explosion is given in that act, which is a phenomenon of epilepsy, he returns to himself, he has the moral sense, and he understands that he has done wrong; but an image which crossed his mind, sufficed that, suddenly, without first submitting it to his judgment, and without confronting it with other ideas and sentiments, as a person in his natural moral and intellectual life would do, the explosion of his excitability took place, and he committed violence. But is such a person immoral? He is not immoral, he has not perversion of the moral sense. But there are others who do not see things as a man of our civilized epoch should regard them; they know right and wrong, justice or injustice; and then along with this moral disorder there is an excessive emotivity; any reason whatsoever suffices that these individuals, being unable to counterpoise to the stimulus the moral sentiment, shall commit such acts as will bring them into the criminal courts. We have many examples; individuals who are deliberate and obstinate forgers, others who, though possessing the highest intelligence, commit the most shameful acts; for example, *Bacon*, as intellectually estimated, a genius, yet became the accuser of his benefactor; a person such as he was who, with a powerful intellect, that might have ruled the world of politics, was yet the vilest of men, not only in the ingratitude which he showed towards his benefactor, but because he was really imbecile and vile in all his public

life; will ye write him down among the epileptoids? By no means; he was not an epileptoid; he acted calmly and without impulse, the excitability of an epileptoid. Might ye not, with very good right, call him a moral fool?

The honorable Lombroso has reminded me of one point, on which I must detain you a moment. Not only have I not designated as a moral lunatic that person who is imbued by education with certain ideas of human actions, rather have I said that he is not immoral under a correct judgment of morality; but he is immoral when contrasted with another class of citizens, he is immoral when confronted with the civilization of these times, but *per se* he is not immoral. For example, the *camorrista* of Naples says it is a point of honor, it is human dignity, to resist the public force, to attack it, to declare the war with two knives in the hand, and to go through it without even the aureole of an applauding public; and when one of the two is left on the ground mortally wounded, and is carried to the hospital, if he is asked who has wounded him, he answers "I do not know, I was going about my own business, and some unknown one unexpectedly wounded me;" there is not a single instance of a wounded combatant denouncing his antagonist to the public authorities. Do ye know why? It is because he reasons thus; "If I survive, revenge pertains to myself as a brave; if I die, I should leave behind me the name of a coward, if I accuse any one." Now do ye believe that there is here immorality in the sense of perversion of the sentiments? No, there is, instead, an intellective fact, it is the effect of the ideas which that individual has acquired respecting justice and injustice, honor and dishonor; I do not call him a lunatic. I go so far as to say, (and it is a bold saying), I do not even call him immoral, he is so only relatively. In like manner that one is not immoral in an absolute sense, who, in savage society, eats the flesh of his elders, (whether it is atavism or a thing acquired, is a question that does not concern me, the conception is

for me enough). It is late now, and we have other duties; I therefore dot a full stop.

Lombroso. On the whole, I see that we are in much closer accord than I had imagined. I shall add only a few words. The moral lunatic sometimes knows that he does wrong, but he has pleasure in doing it; this is what the father (papa) of Italian psychiatry appeared to me to say, if I am not mistaken, for I did not hear him very distinctly. To the degenerative characters we should add the clinical, especially the dullness of sensibility, the muscular agility, the left-handedness, the slowness of auditory and visual sensations, the emotivity, clinical characters which seem to pertain to these persons more than to others. We are in perfect accord, and I have pleasure in being able to salute my master, from whom I departed when I commenced these studies.

As to my friend Tamburini, I have not well understood the opposition shown by him to my conception that moral insanity is a form of epilepsy; there are *e. g.* the head pain, the gluttony, and so many other forms which now have passed into the domain of epilepsy; there is, above all, the *epilepsia larvata*, which passes over without convulsions; there are very many special varieties in that great tree, out of which so many branches come, and the characters are on one part great emotivity, on the other bright intelligence, and even genius. Here Prof. Buonomo opposes to me the fact that many geniuses have been moral fools. Certainly Bacon, Sterne and Foscolo were moral fools, but if we understand epilepsy as the phrenologists (modern) understand it (a discharge from the brain cortex), this confirms, it does not assail my theory. This form, in those persons, was manifested in a discharge of creative genius, as Napoleon said; it is the work of a moment which vanishes, and it is sometimes succeeded by amnesia; Tasso, for example, often forgot what he had written. The majority of geniuses are moral fools (!), they are bad, for example, Napoleon, how much evil did not he do to his friends? Tamburini

asks for clinical characters; I have not given them, because I wished to save time, but we all know them; for example, the intermittences, irritability without cause, amnesia, vertigoes, tendency to laugh at everything, to burlesque everything, even the highest and most sacred things; these are characteristic of both the epileptic and the moral lunatic. I described only those anatomical characters of epileptics which are identical with those of born-delinquents. Examine the descriptions given by G. B. Verga, Frigerio and Tonnini, in that monograph which is a treasure, an immense treasure, and you will find that the characteristics of the moral lunatic overlies one another in their anatomical delineations of the epileptic.

Let us but glance at the physiognomy; thanks to Tamburini and Fiordispini who have presented to us those excellent photographs of moral lunatics! Compare them with those which I have given in my book, as types of born-criminals, and you will see the perfect unity. Do not then accuse me of defect in the anatomical part; it is that in which my work abounds, it is perhaps that in which I am unassailable. Tamburini thought to put before us a scarecrow, when he said, "so then the whole of psychiatry is put under the wings of epilepsy."

First of all I begin, in defending myself, by saying that I am not the first nor the only one here; Tonnini has gone beyond me; he admits into epilepsy even some intermittent hallucinal maniacs. But I assure my friend Tamburini that I do not place among my epileptics idiots, cretins, melancholics, pellagrosi, monomaniacs, the maddish, the hysterical, the multitude of alcoholists, etc. I therefore leave an ample field open to psychiatry. Tamburini will agree with me that in doing so I do something of practical value. In fact when we appear before the judges, saying that such or such an individual is a born-delinquent, we encounter diffidence and incredulity; but when, on the contrary, we conclude by saying "this man is an epileptoid, he committed the offence just as another man might fall down in convulsions, and he

has the physiognomical, anatomical and clinical characters of an epileptic;" then we do our work as clinicists and not as jurists; this is the advantage; by doing thus we place ourselves right, but by adopting half terms, phrases, psychological rather than clinical terms, we always find ourselves refuted both by the judges and the public. Prof. Buonomo has made objection to me, touching certain crimes which cannot be ranked among the epilepsies, *e. g. camorristism*. I have always said that there are forms which constitute the delinquency of occasion; the metaphysicians and spiritualists believed that man is born good; but which of us does not know that he is born to be bad? *We all** know that he abounds more in evil than in good, above all in the period of childhood, and in the childhood of humanity; well, should their innate tendencies not be wiped out, the man becomes a *camorrist*; if he finds more occasions for evil deeds than for good ones, you will have the delinquent of occasion.

"But it seems to me that Prof. Buonomo made another objection with much ingenuity. He said: 'There are crimes which have no connection with impetuosity; *e. g.* forgery;' but it is necessary to study these persons, it is not easy for one who has not, as I have done, lived a long time among them, to judge of them, and to acquire complete knowledge of them; these forgers are not forgers through their whole lives; some days they flee from crime, but afterwards a time comes when they cannot avoid it, and then they fall in an intermittent cerebral discharge, like that of so many other forms, *e. g.* wounding and theft. There are thieves who, on leaving prison, swear they will steal no more; they remain for a week without robbing, but there comes round a night on which they cannot go to

* "*We all* know it.

"*MacDuff*. He has no children. All my pretty ones?"

"Did you say all? O, hell-kite—all!"

It is not to be wondered that an anthropologist who had spent so many years among convicts, should lose all faith in innate human goodness. It is, however, a pity that Lombroso's sweeping malediction called forth no rebuke; but the hour was late, and probably all were anxious for the close, and therefore unwilling to provoke further elongation of the discussion.

sleep without robbing, so great with them is the necessity of doing wrong. I have had under me the case of an individual, who, before hanging himself, wrote to me the following letter: "The paper on which I write this has been stolen, the ink and the pen have been stolen, and the cord with which I will hang myself has been stolen." But I now repeat, even facts which appear to be devoid of emotion have it, for these individuals feel the need of doing evil; and some will forge and some will steal.

I close with a fact which will be a sufficient reply to the objection of Buonomo. A Russian author, whose name I forget, has recently related, in a book that is full of most valuable facts, gathered in a sort of prison, that, in his district there is a kind of colony of smugglers. They are nearly all smugglers of alcohol; they have everything to lose and nothing (in the end) to gain; everything to lose, inasmuch as, if they are caught, they suffer five hundred strokes of the knout on the bare back; nothing to gain, for even when they succeed in defrauding the revenue the business does not pay; but they were smugglers before and they continue such afterwards; they have to obey a sort of irresistible force; and on this side, if not on all the others, of which I do not speak, because I have not studied them, this form enters the category of the epileptoids.

Tamburini. I have to say that I did not object against Prof. Lombroso any want of the anatomical characters common to epilepsy and congenital delinquency; no, he has even brought to us a superabundance of them; I merely wished to show that the community of these characters, between epilepsy and congenital delinquency, did not lead to a necessary identification of these two states; because it would otherwise be necessary to identify with them other mental diseases, which, having some characters in common, are yet essentially different. I will now say but a word in concluding, and it is this, if Prof. Lombroso shall succeed in demonstrating that all the well ascertained cases of moral insanity present true epileptic characters, then I will fully concur in his opinion.

Moral and Criminal Responsibility.*

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PSYCHOLOGY, or the science of mind, is so intimately associated with all questions of moral responsibility, that any attempt to discuss them independently of each other must prove abortive. Few will have the hardihood to deny that immense strides have lately been made towards the unravelment of many of the mysteries of mind. The most important of these disclosures—the one that is most encouraging to further investigation—is that mind must be studied along with body—that it is the idlest of tasks to attempt any exhaustive study of mind apart from corporeal organization. The old idea that mind is a mysterious entity, independent in its origin and characteristics, of the bodily organism, has been, in countless ways, utterly discredited. Whatever opinions we may entertain of mind in its entirety, however fundamentally its phenomena may seem to be secerned from all principles of physical action and being, we are compelled, in every satisfactory study of it, to regard it as a phenomenon of the nervous organism. For this reason the profoundest interest must continue to attach to comparative anatomy and physiology. It follows too, that we have in the various stages of nervous advance corresponding stages of mind in its development from the simplest sensation to all those complex intellectual and emotional phenomena which are encountered in the higher animals and in man. Not that alone in the nervous centers and fibers, which functionate intelligence, do we find the key to intellectual advance. The late student of psychology knows that intelligence is not a mere matter of nervous

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susceptibility to impressions. The muscular, together with the osseous and other solid structures, play important parts in intellectual development. One of the most interesting points in psychological science, and one that is, perhaps, beyond all others, useful in inculcating the true nature of mind, is the high place which is assigned the muscles in the gradual development of the intellect. The point needs to be especially emphasized, in all popular discussions of mental phenomena, that complexity and definiteness of movement are inextricably conjoined, as essential factors, with that multiplication and definiteness of sensations and perceptions which distinguish the advanced intellect. A proper insistence upon this point will avail to show, as nothing else can, that mental phenomena are not mere adjuncts of the brain and nerves, but that the whole organism is needful to their evocation. Such insistence, too, will further indicate that mind, instead of being that lordly entity, which so many have described, imposed in some mysterious manner on the brain to control all the operations of the bodily organism, is more properly regarded as a creature of that organism, and dependent even upon the gross mechanical details of that organism for the materials of its constitution. As mankind think of their life or health, so they should learn to think of their mind—as a potency conditioned upon the general well-being of the body. To say that one's digestion is disordered, or his intellect impaired, is meant, in either case, that a special function is impeded by some derangement of the organism.

Nor should there be the least hesitation in affirming that there are as many varieties of mind as there are varieties of organism; and that there has been in the past, reckoning by ages, and in the present, by generations, a genesis of mind, just as there has been, and is now, a genesis of organisms. With the theological questions of the differences between the human and lower animal mind, as to immortality, etc., science, as at present informed, has nothing to do. So far as our methods

of scientific research extend, there is no difference except in degree. The human organism is just as subject, as that of the lower animal, to all the laws of development from a formless protoplasm, through various stages of advance, to the perfect individual; and its intellectual advance as rigidly conditioned upon the organic advance. In every view, the old idea of mind, as a separate and superior entity, thrust upon the organism to control its operations, is discredited. The fallacy of the old metaphysical idea of mind as separate from the body is evident from the lately established facts with reference to memory. That peculiar power of recalling the past, which we call memory, is not, so to speak, a unit, but is multiple. It has only lately been shown, by actual experiment, that our memories, like our sensations, have their centers in different regions of the brain. There is, for example, a separate memory of words, things, sounds or colors, each having its special center in the brain, independent of the others, any one of which may be lost while the others remain. The consonance of these disclosures with general observation and experience, must be evident to all. How many persons there are whose memory for one class of facts is good, while for others it is either indifferent or entirely wanting. One man never forgets a face but cannot remember a name. Another is habitually at fault with faces but never forgets a name. Were mind a severe unit such facts would be inexplicable, but to modern psychology the explanation is easily found in the comparative vigor and impressibility of the nerve centers associated, more especially, with sight and sound.

Correct views of the nature of mind can be, in my opinion, inculcated in no way more forcibly than by reference to the principles of heredity. The art of breeding in this century has engaged talents of a high order, and pecuniary means almost unlimited. And the closely observed facts of this most interesting art prove that not general characteristics only, but very minute details of organization, are transmitted to offspring; and not phys-

ical peculiarities only, but intellectual and moral. Countless searching investigations prove that all these principles of heredity are just as true with human beings as with the lower animals. I could fill pages, if time permitted, with interesting illustrations of this truth.

We have in these facts some very pregnant truths with reference to moral responsibility. Every physician knows that there is such a close connection between crime and insanity that the first query on hearing of any astounding crime is, was the perpetrator a person of sound mind? Now insanity, in a great majority of cases, is a result of inheritance. Not that the individual is born insane, but is endowed with a peculiar character of constitution in which the disease of insanity finds a nidus eminently fitted for its development. In other words, there is what is termed the insane temperament, in which there are, though hidden to ordinary examination, imperfect or badly balanced nervous organizations. One very frequent manifestation of such a diathesis is an abnormal state of the feelings or emotions. There are numbers of persons who appear to be rational so far as the reflective faculties of the mind are concerned, but whose emotional states are habitually abnormal. They feel too little or too much, or their feelings are of the wrong kind. Perversion of feeling is often the earliest precursor of insanity, and for the simple reason that mental disease is a dissolution that proceeds in a manner directly opposite to evolution. Well proportioned and adjusted emotions, being the highest product of evolution in mind, is the first to succumb to the stress of incipient disease or dissolution. It is a fact, with which all are familiar, that conduct is, not, as a rule, determined directly by ratiocinations, but by the associated emotions. How important therefore to pay the strictest regard to our diet, and other sanitary precautions that are well known to qualify the involuntary impulses of the organization, and through the feelings and emotions to lead up to the highest moral and intellectual achievement. Many persons have declined from noble courses of conduct through

some taint or vice of the blood, so to speak, causing the quantity or quality of their feelings to undergo an abatement, against which the will is as powerless as a steam indicator against a leak in the boiler. In truth it is characteristic of the will-power that it does so much inaugurate or impel to special actions or courses of conduct, as it directs and tempers the actions induced by involuntary impulses. In this directive function its power to inhibit comes from its capacity to incite other actions, by turning, as it were, the roused organic forces into other channels or upon other nervous centers. So we see that the ability and disposition to act does not attach to the will but to the involuntary powers, and these in turn are determined by the organic register of the race and individual experience.

From every point of view the idea is intensified of the direct dependence of character and conduct upon organic details. Where the nervous structure is imperfect, as a whole or in any of the parts, there is a necessary departure from the normal mental and moral endowments; for these latter are the castings of which the former are the mould. And this is true not only of great deficiencies of organic structure that are obvious to the most casual observation, but of those minutest details which the microscope is sometimes competent, sometimes incompetent to disclose. The modern psychologist finds no difficulty in the affirmation, of late habitually made, that not only are organic peculiarities hereditary, but also the mental and moral. Anger, fear, envy, jealousy, libertinage, gluttony, drunkenness, and criminality in any or all of its features, are transmitted to offspring, especially if both parents alike possess them.

Although such teachings have been before the public for years, so inveterate are the prejudices and notions with reference to everything that concerns morals, that they do not exercise their proper influence on the convictions of even intelligent men. We never think of casting reproach for any species of incapacity that results

from physical abnormality. We see clearly that it is a misfortune, and not a fault, that many persons are partially or wholly lacking in the perceptions that come through one or several senses, or, as not unfrequently happens, are destitute of any power to appreciate music, or to distinguish one color from another. But we have yet to ingrain into the public mind that there are corresponding multiplied deficiencies of moral endowment.

At a time, by no means remote in the past, insanity was regarded as a demoniacal possession. But the sun of modern science had hardly begun to shine before such an idea was remanded to the limbo of the absurd. But the devils, driven from man's intellect, took refuge in his moral powers. But all the signs of the times indicate that diabolic influences are no more needful to explain the eccentricities and perversities of man's moral powers than his intellectual and perceptive. How forcibly are these truths emphasized by such facts as those which Dr. Drysdale has traced in his history of that most remarkable family known as the "Jukes," extending through seven generations, and including a tabulated report of 709 individuals, every one of whom was either idiot, murderer, prostitute, thief or robber! To suppose that every member of so large a family chose, of a wicked will, to be vicious rather than virtuous, is to suppose what is exceedingly improbable. How much more rational to suppose that their vicious courses of conduct were the natural results of their depraved organizations—of the passing on from parents to children, along with their physical, their intellectual and moral proclivities.

It is not to be understood here that the whole result is due to organization, and no part of it to association and training. These latter must always be credited with decided influences on character; but we must remember how almost inevitable it is that the training of the children of vicious parents should be bad. Apart from their introduction to evil courses through the direct instrumentality of parents, there are laws of attraction and repulsion

in the social, moral world, by which individuals are constrained to group themselves according to their affinities with the good or the bad.

But although, under favorable conditions, education or training may exercise decided influences in the determination of conduct, the most reliable, the most persistent traits of character, are the inherited. And this for many obvious reasons, one of which is, that the fixity of type, or the faithful reproduction of ancestral traits, is nature's only method of fortifying her long and laborious advance from low to high. The laws of life, too, are built upon enjoyment. That which conduces to enjoyment contributes to bodily vigor, in all the animal tribes, high or low. Even in man, as we now see him, the same principle of well-being holds; though amid the complexity and deep soundings of his powers the problem of greatest happiness is very often difficult and extremely intricate. But whether facile or hard of determination, happiness is the pole-star of all animal life as we know it. In the struggle for existence the competition is so sharp, that for the multitude, preference will always be given to functions which can be performed with least labor; to say nothing of the fact that the intellect, the tastes, the desires, may, in one view, be regarded as forces, and all forces, in the very nature of things, must expend themselves on lines of least resistance. And this native or inherited adaptedness of the organism for exercising special kinds of activities with facility, is intensified by that principle of the organism which integrates into its substance the spirit of every performed act. With each act there is a decomposition of nerve matter followed by quick repair. But this quick repair is not an exact reproduction of the former tissue, but is that tissue *plus* a qualification imparted by the act. Nor ought it to be forgotten that what is true of the repair of nerve tissue is true of other tissues. Every recomposition of tissue embraces a qualification of it induced by the act that caused its dissolution. This view makes it easy to understand how deeply

all vicious traits of character are intrenched in the laws of life and mind. But it also holds aloft a bright beacon for our encouragement, in the fact, that the qualification of tissue and disposition, due to improved courses of conduct, is handed on down by heredity to the next generation, to be still further improved. And when we remember how potential is education in qualifying bad traits of character and intensifying good ones, one will readily see that on hereditary transmission of newly-acquired traits we have a right to build the most enthusiastic expectations of human advance. By education, of course, is meant a theoretical and practical knowledge of nature, her laws, and man's relations to them, and of the principles of moral and social science, together with such convictions of the beauty and excellence of virtue as will habitually lead up to just and noble courses of conduct.

The dependence of character on organism is further enforced by attention to the multiplied phenomena of human life that have their origin in climate. The subject is so vast, the forces so intermingled with other recognized factors of environment in evolution, that the briefest glance must suffice. Dr. John W. Draper has written a treatise upon this subject that fairly bristles with interesting facts. Amid a multitude of other considerations the influence of climate is evident from a truth now almost universally conceded, that we have in the European and African races the same primitive race, subjected for ages to very different climates. Although we cannot repeat evolutionary race marvels, any more than we can repeat any other marvel of evolution, for lack of the almost infinite periods of time and infinite variations of surroundings which were prime factors of all evolutionary results, we can plainly see some of the smaller effects of climate in the difference between the inhabitants of southern and northern Europe, and in the changes wrought in Europeans by transportation to hot countries—changes that would unquestionably be much more pronounced but for the intercourse maintained with the mother country. There are indeed a

number of very obvious causes of the change referable to climate. In hot countries the function of the skin is so augmented as to induce a sort of revolution of the whole internal economy, by its supplantation of the office of the various other excretory organs. In cold or mild climates too, labor is a luxury, the chief joy of life, while in hot countries it is an excruciating task. It is easy to see how the listlessness and idleness, begotten of the heat, by dwarfing the muscles and the cerebral ganglia presiding over them, should scrimp the perceptions, the ratiocinations, the nobler emotions, the volitions, and thus give to the inhabitants characters essentially different and inferior to those of colder regions.

Nothing could be more evident to the most casual observation than that animals are as broadly distinguished from each other by their intellectual and moral as by their organic traits; and that every possession of a like organism is endowed with like intellectual traits. These facts, while of the utmost significance, are in a great measure disregarded, owing to the prejudices of forestalled conclusions with reference to the independent subsistence of mind, or instinct, or both. Yet there could hardly be a more forcible illustration of the dependence of character on organism. Even for the slight differences of intellectual and moral endowment in the same variety or family, we have an easy and satisfactory explanation in the necessary differences of the details of their organization. Of any number of dogs or horses, each will manifest traits of disposition peculiar to it alone. Of two dogs, by the same parents, at the same birth, one may be amiable and docile, and the other combative and intractable. In the case of these and other animals everyone is ready to refer the differences of behavior to the right cause, namely, to the differences of their minute organisms. But when in a human family two children are similarly distinguished, the one is called a good, and the other a wicked child. Yet nothing is more certain than that the docility and perverseness in the case of the children are as much the outcrops of

the special organization as in the case of the lower animals. Even the evanescent change of constitution following the ingestion of alcohol, or other narcotics, is fruitful of just such results as flow from confirmed bents of character. Now the narcotic could hardly be thought to qualify the intellectual and emotional processes except through the cerebral organization; and the fact that the thinking and emotional forces wax and wane with organic vigor, shows that they are in some way reflections or derivations of that organism. And how further manifest does this become when it is remembered that moral pain, remorse or sorrow, like physical pain, is augmented or lessened by the augmentation or diminution of blood. There is too a world of significance in those radical changes of character which so often supervene on injuries to the head, or on puberty, and the change of life in women. Within my own knowledge a man of highest intelligence, irreproachable character and the kindest feelings, was converted, by a fall upon his head, fracturing his head, fracturing his skull, into a very demon. He became deceitful, cruel and vicious in the extreme, and had to be committed for safe-keeping to a hospital for the insane. He remained in this condition until relieved by operation, of the pressure upon his brain, after which he almost instantaneously lost his immoral traits and resumed his former unexceptionable character. Could anything prove more plainly the dependency of mind and moral qualities upon the integrity of the brain structure?

The study of mind by metaphysical methods has heretofore, through the thousands of years that it has been attempted, proved utterly barren of all practical results. Any attempt, in fact, to unravel the complex phenomena of the mental processes, without the bright light which modern science, and especially the Darwinian theory of development throws upon it, would be as fruitless of results as the study of physiology without a knowledge of comparative anatomy. Modern scientific methods have accomplished the miracle, so to speak, of unifying all the

phenomena and forces of the universe, by demonstration of the one great truth—the presence and constancy of nature's laws. Now the most obvious corollary of the indefectibility of law is the rigid determination of every consequent by its antecedents, or every effect by antecedent causes. If there were exceptions to this rule anywhere in nature, she would be capricious, and anything like a progressive science would be altogether unattainable. Mind, as one of the phenomena and forces of the universe, must be conditioned, in its origin and all its stages, by this universal principle of the reign of law—effect and cause. To say that in the mind of man are encountered exceptions to this universal law of cause and effect, is to resort to the antiquated device of regarding inscrutable phenomena as without the pale of law, instead of being determined by laws not fully understood. There cannot be predicated a reign of law in nature, if her most interesting phenomena and forces, those of mind, be not subject to it.

The foregoing principles of mind, in their practical bearing upon Moral and Criminal Responsibility, open up one of the most absorbing questions of the day. Penal reform, or the proper treatment of criminals, as everyone knows, is already engaging the time and talents of the statesman and philanthropist. If what we have said be true, it must be apparent that lawlessness and crime are not, as we have been commonly taught to believe, the results of willful perverseness, but are the inevitable outcrops of organizations, corporeal and mental, not yet brought into harmonious relations with the principles of civilized society. To the question: "Why is one man a criminal?" "I answer," says Dr. W. G. Stevenson, in his late learned essay on "Criminality," "for the same reason that another is a moralist, or an honest, law-abiding citizen. Criminals are such either because they inherit a brain structure potentially incapable of generating moral qualities, or, through the influence of unfavorable environment the development of mind does not evolve sufficient moral

strength to guide and control the lower propensities of the man's nature."

It is fashionable in certain quarters to speak of this as a *diseased* condition, and accordingly we have all sorts of high-sounding names, such as kleptomania, pyromania, erotomania, etc., indicating the peculiar type of criminal or immoral conduct. Even so great an authority as the learned Despine, whose investigations of crime and criminals has been both profound and extensive, speaking of this class of persons, says, "there must be something abnormal in the disposition of criminals, when they yield with the utmost facility to desires which would excite the strongest repugnance and horror in a truly moral man. Does not this abnormal state reveal itself in the clearest manner, when, contrary to what poets and moralists have represented, we see the wretch who has committed crime exhibiting no symptoms of remorse, but rather a disposition to repeat the same criminal act?" With the highest respect for this learned authority, and for others who would charitably cover with the mantle of disease these extraordinary manifestations of immoral and criminal conduct, we do not find it necessary to resort to this theory of disease to explain these departures from the standard of moral rectitude, which society has established for its protection. Deficient or undeveloped nerve centers does not constitute disease of the brain, or insanity, any more than a departure from some arbitrary standard of physical strength constitutes disease of the muscles. Men vary in mental and moral qualities as they do in physical aptitudes, according to their constitutions.

Mr. Brockway, of the Detroit House of Correction, in a paper before the International Penitentiary Congress says: "The species of crime to which a person is addicted depends upon the circumstances which surround him, or upon inherited tendencies, or both, but whether a man will commit a crime at all, depends, in a great degree, upon his constitutional characteristics." He argues the existence of moral imbecility, incoherent mental

development and feebleness of will-power, and affirms that "this undeveloped state, this paralysis, as it were, of the moral faculties, though, no doubt, largely due to the want of proper early education, is more often inherited from progenitors." "Glancing at mankind as a whole, what," asks Despine, "do we see? Anomalies, monstrosities. In a physical point of view, by the side of men well-formed, of robust health, of beautiful and noble forms, we find beings sickly, weak, ill-shaped, puny. Viewing men intellectually, what do we see? The same differences. By the side of men of genius, who create sciences, who produce the marvels of imagination, which in literature and the arts excite our enthusiasm, we find vulgar intelligences, insensible to the creations of genius and the splendors of nature, incapable of lifting themselves above the direction of their business and the material wants of life. Descending in the scale, we meet, at last, with the weak-minded, the imbecile, the idiot. These natural imperfections, these anomalies, these infirmities, these monstrosities, which we see in the physical and intellectual world exist also in the moral, as marked, as numerous and as varied. Just because the man is in health, because he has command of his ideas, because he reasons, because he is intellectually intelligent it has been thought he must be also morally intelligent."

Quoting once more from the very highest authority, we are told by Dr. Maudsley in his "Body and Mind," that "at the end of all the most subtle and elaborate disquisitions concerning moral freedom and responsibility, the stern fact remains that the inheritance of a man's descent weighs on him through life as a good or bad fate. How can he escape from his ancestors? Stored up mysteriously in the nature which they transmit to him, he inherits not only the organized results of the acquisitions and evolution of generations of men, but he inherits also certain individual peculiarities or proclivities which *determine irresistibly the general aim of his career*. While he fancies that he is steering himself and determining his

course at will, *his character is his destiny*. The laws of hereditary transmission are charged with the destinies of mankind." Again he says, "There is a destiny made for man by his ancestors; and no one can elude, *were he able to attempt it, the tyranny of his organization*."

The conclusion, in fact, in whatever light you view it, is irresistible, that all the actions of man, physical, intellectual and moral, are the inevitable consequences of preceding circumstances and conditions which absolutely control and dominate him. I have given so many proofs of this in the course of this essay that it would be useless in conclusion to do more than redirect attention to the very current fallacy respecting the so-called freedom of the will. Mr. Herbert Spencer, with the depth and lucidity which characterizes all of his philosophical utterances, thus clears up the difficulty with reference to this important point: "That everyone is at liberty to do what he desires to do (supposing there are no external hindrances), all admit. But that everyone is at liberty to desire or not to desire, which is the real proposition in the dogma of free-will, is negatived by a variety of considerations." The error with regard to the will, very exactly resembles that which was long prevalent with reference to the lower organisms—that they were spontaneous productions of nature, and not the outgrowth of previous organisms. Now as scientific advance emphasizes the conclusion that all present life is a product of previous life, and is rigidly conditioned upon its character, so all intellectual manifestations are as rigidly conditioned upon antecedent states. In other words, that the principle of development, or orderly growth, holds with reference to mental as to corporeal powers. The will, as one of the constituents of mind, either conforms to this law of orderly growth or development, or it must be absolutely free from all the bias of present circumstances or previous experiences, than which nothing could be more absurd. The truth is, every mental act, like every corporeal, is determined by two factors, the external circumstances, and all the previous exercises

of mental acts registered in the organism. The will must be either conditioned or unconditioned by previous acts. If it is thus conditioned, it is not free, in the usual sense attached to the expression. If it is not thus conditioned, then its acts are utterly arbitrary and haphazard, and anything like a science of mind is the vaguest of idle dreams.

"Let the mind be free, in the full metaphysical sense of the word," says Dr. Maudsley, "and it would be impossible to run an express train London to York, or to cross the Atlantic in a steamboat, with the least assurance of safety. Did not men in some measure foresee the acts of their fellows from a knowledge of the operations and motives in their minds, they would have to await them in helpless uncertainty, as they await the decrees of the will of God."

Interesting and instructive as the foregoing array of facts and principles are to the student of psychological science, they have a much wider and higher significance to the jurist, the philanthropist and the statesman. As a ground-work of penal reform, and of complete change in our present system of criminal jurisprudence, they are especially worthy of consideration. In their application to our present methods of criminal procedure it is plain that many great and radical changes are called for. In the first place our courts must get rid of the current ideas of responsibility growing out of the old metaphysical conception of mind as an entity separate and distinct from the organism, and yet governing and controlling arbitrarily its movements and volitions. It must divest itself of the dogma of free agency as taught by the metaphysical school of philosophers, and recognize the fact that crime is the culmination of certain impulses which the criminal is powerless at the time to resist.

It will not do to insist, as the law now does, that the criminal had the power to choose between right and wrong, and to do the one or avoid the other. While it may not be denied that he had a perfect knowledge of right and wrong, and was fully aware of the consequences

of his act, yet it will not do to insist that he had, at the time of its committal, any power to have acted differently. While it is true, in a restricted sense, that knowledge is power, it is no less true that it is powerless to restrain the impulses that dominate the organism and control the individual. The man's acts must be regarded in every instance as the inevitable outcome of his organization, that is to say, of certain varying states or conditions of the nervous centers which preside over the actions of the individual and control his movements and volitions.

And this rule should apply invariably to all classes of criminals, irrespective of their various degrees of mental and moral capacity, or the character and circumstances of the crime committed. Maudsley, in his admirable treatise on "Body and Will," makes three classes of criminals, the first of which, the hereditary or habitual criminal, he describes "as the victims of a bad organization who are urged into crime by instincts whose natural restraints are wanting, whatever their circumstances in life, and are not to be reformed by instruction, or by example, or by correction," these he designates "*nature-made criminals*." Another class, "comprising those who not being positively criminally disposed by nature, but who yet fall into crime in consequence of a gradually increased or suddenly inflicted pressure of adverse circumstances," he calls "*circumstance-made criminals*." And between these two classes, which occupy the two extremes of the scale, he designates still another, "comprising those who, having some degree of criminal disposition, would have been saved from crime had they enjoyed the advantage of a good training and of favorable environments, instead of growing up without education and amidst criminal surroundings." But besides these well-recognized classes of Dr. Maudsley, there is still another class, known as "*insane criminals*," whose lawless proclivities are the result of a change of character due to disease of the brain.

But what we wish to insist upon more especially is, that in each and all of these classes, the moral value of

the criminal act is precisely the same; or still more definitely, that it has no moral value—the lawlessness in every case growing out of the inability on the part of the individual to conform to the requirements of the law. In other words, to whatever source the criminal act may be immediately traced, whether to bad heredity; evil associations, pressure of adverse circumstances, insanity, idiocy, or diseased brain action arising from alcohol or other toxic agent, its moral aspect is invariably the same, and is in every case the result of an inability to resist certain influences urging the offender in a prohibited direction.

The insane man whose powers have been dethroned by disease, and the idiot, whose brain, in consequence of defective organization, is unable to supply the motive for self-control, the practice of the courts has always been to acquit of all crime. But in the other classes, described by Dr. Maudsley, the wrong doer is held by law to a strict accountability for his criminal acts. He is not only restrained by imprisonment from repeating them, but in many cases subjected to corporeal punishment both cruel and resentful. Whatever may be the theory of the law respecting the vengeful character of punishment, our daily observations teach us that it is often tolerated by the courts, and as often practiced by officials in their dealings with the criminal classes. "Pity it is," says Dr. Maudsley, "that no better use is made of beings so mal-organized as to be utterly incapable of moral sensibility, and therefore of repentance and reform, than to punish them with sufferings which do them no good, and after that to turn them loose again upon society in which they can make no living room for themselves except by crime." Revenge, it is clear from the foregoing exposition of the genesis and operation of mind, should have no place in prison discipline. It is unscientific, to say the least of it, and what is true in science cannot be false in law, in morals or in religion.

But the point we wish here more especially to enforce is, that all violators of law and order, without respect to

their mental or moral capacity or to the class of criminals to which they belong, should be held alike to a strict legal accountability for the lawless acts they may commit. To illustrate this position take the case of the habitual law breaker. Enough has been said to show that, for a variety of causes, he has become incapable of discharging the duties of good citizenship. Whatever his original characteristics, his nature has become so depraved that it is as utterly impossible for him to change his bad methods of living as for the Ethiopian to change his skin. And the same may also be said of the confirmed inebriate. Whether the habit for drink has been acquired, or transmitted through a line of neurotic ancestors, he can no more lead a sober life than he can lift a weight that is far beyond his strength. There are individuals too, with apparently sound intellects, who are utterly wanting in moral sensibility, just as some persons are deficient in power to appreciate melody. To some men a negro melody has all the charms of the noblest creations of a Mozart or Beethoven. The heavenly inspirations of every gifted son of song pass them by, because nature has stunted their musical capacities. Multiplied observations in every part of the world leave no room to doubt that the forces of the mind are marvelously compounded, and one or several of these faculties may be stunted in various degrees without impairment of the others, just as a person may have excellent eyes for form and yet be deficient in power to distinguish colors. That the intellect is often apparently normal, and yet the moral faculties absent or dwarfed, there is no room to question. Cases of this kind are continually coming up in our courts to puzzle the judges and confound the juries. These moral imbeciles, for that is their proper name, though not insane, are utterly incapable of conforming to the requirements of well ordered society, and so habitually do violence to the moral instincts of those around them.

Now each and all of these separate classes of offenders—the habitual criminal, the inebriate, the moral imbecile,

and we might add the idiot and the lunatic, are to be held alike amenable to the laws of the land. In the protection of society, offenders of every class and grade should be held to a strict legal accountability; for an injury is an injury by whomsoever committed. There should be no such thing as acquittal for crime. And this universal legal accountability involves the right of the courts not only to deprive the law breaker of his liberty, and if needs be of his life, but to keep him in restraint until it is safe to restore him to society.

Clearly the two-fold object of law is the protection of society, and the prevention of crime. But crime cannot be prevented by imprisonment alone; there must go along with it the reformation of the criminal. It must therefore be evident that any attempt to align our criminal jurisprudence with the advances made in scientific psychology involves the establishment of reformatories, where the proper corrective and educational devices may be brought into successful operation. Mere punishment does not reform. Past ages, as well as our common, every-day observation, have taught us this lesson in a way that leaves us no room to question. To reform the vicious there must be brought to bear on them influences closely related to those by which good characters are formed in every well conducted family. Our reformatories, in fact, should bear very much the same relation to the criminal classes that our schools and colleges do to the ignorant masses. There must be instruction, discipline, industry, and last but not least, sympathy and affection. So long as fear alone is appealed to, so long will the criminal be hardened in crime. But when the State has demonstrated to evil doers, through her courts of justice, that it hates the crime and not the criminal—that its object is to build up and reform the character and not to inflict needless pain upon the body—that while protecting society from evil-doers it recognizes a similiar obligation to protect and reform the evil-doer himself, what encouragement will thus be held out to these poor, pitiable victims of a

tyrannous organization to avail themselves, as far as possible, of all the means and influences invoked for their reformation.

It is further evident, as the protection of society is the end aimed at, and reform the only reliable means, that the terms of confinement for criminal offences should be indeterminate, that is, longer or shorter, according to the nature of the crime, and the evidence the criminal may give of his thorough reformation. I say nature of the crime, because there are criminal acts of such a revolting and atrocious character that public policy, as well as public safety, might demand the perpetual confinement of the criminal. No criminal should be discharged from custody who is not qualified intellectually and morally to respect the rights of others. If incapable of reform, as a large proportion of the habitual criminals are, they should be confined for life irrespective of the crime committed. It is worse than folly to turn such dangerous characters loose upon society, as we are now doing, to repeat their criminal acts.

And to secure the real ends of their creation, these reformatories should be sufficiently numerous and capacious to admit of a rigid classification of inmates. To mingle the several classes of criminals together would be to nullify, in advance, all efforts for the improvement of their habits and character. As no two criminals, even of the same class are exactly alike in their characters and capacity for reform, it follows that their treatment and time of detention, even for the same offence, should not be the same. This is an additional argument against the system of fixed sentences, prescribed by statute, and pronounced by the judge or juries.

For criminal inebriates or lunatics, special provision should be made, and like other criminals they should be detained in custody until cured of the habit of drink, or disease of the brain, as the case may be. To acquit the lunatic or inebriate of legal accountability, as the courts now do, and, where provision is not specially made for

their confinement in hospitals for the insane, to turn them loose upon society to recommit their criminal acts, is, to say the least of it, the height of folly.

But in addition to the system of reformatories and hospitals for inebriates and the criminal insane, there will be needed under the new *regime*, a commission selected with special reference to their fitness to ascertain the mental, moral and physical condition of criminals, to prescribe their treatment and determine the time of their detention in the reformatory or hospital. For such a task the average jurymen would be totally unsuited. The function of the jury should cease when it has ascertained the guilt or innocence of the accused. While it is admitted that the duties of such commission will be extremely difficult, and perhaps not always satisfactorily performed, still there is good ground to believe that suitable men can be found in every community to whom such duties might be safely intrusted.

It is not within the scope of this paper, already too lengthy for the occasion, to do more than present, in faintest outline, some of the changes that must supervene upon the application of the foregoing views of Moral and Criminal Responsibility to our methods of criminal jurisprudence. Enough has been said, however, to indicate the general direction which such changes would naturally take. The systematic writer on criminal jurisprudence will some day supply the details, and it is hoped, and confidently believed, will perfect a system of legal procedure, not only in accord with the demands of an exact science, but with the humane sentiments of the enlightened and progressive age in which we live.

Traumatic Insanity and Other Effects of Head Injuries.

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HEAD injuries do not invariably produce mental disease, but when insanity results there are, in most cases, peculiar symptoms constant enough to justify the designation of Skae,¹ traumatic insanity, which has been adopted by Krafft-Ebing,² Spitzka³ and the other leading psychiatric authors.

There are important medico-legal bearings that should induce the scientific physician to accord the traumatic ætiology a just consideration even where the malady did not, upon superficial observation, appear to otherwise differ from the ordinary epilepsies, paranoias, parietic dementias, etc., which, as sequelæ, are often prominent, but which are, as a rule, modified by the traumatism markedly.

Closer attention to such cases will reveal the impure nature of insanity improperly classified under other than the traumatic name when head injury figures as the cause. Many of the perplexing "mixed cases" in asylums can thus be satisfactorily accounted for: such as present first one fairly defined psychosis and then another, or blend two or more forms, aside from katatonia and circular insanity.

The mental ailment being apt to develop long after the receipt of the injury, surgeons do not ordinarily

1. London Journal of Mental Science, Vol. XX.

2. Lehrbuch der Psychiatrie.

3. Insanity, Its Diagnosis and Treatment.

encounter or recognize the disorder, as is evident in the bare mention by Agnew⁴ and Bryant⁵ that insanity may follow head injury and there be no external evidence, upon the head, of the injury.

In hospitals and private practice cranial injuries are seldom followed, from lack of opportunity; even military surgeons are debarred from a satisfactory study, for in the field such cases are sent to the rear, discharged as disabled, or otherwise escape observation, after the wound, if any, has healed.

From various causes even insane asylums differ widely in their statistical records. Thus Clouston⁶ encountered but 12 cases in 9 years at the Royal Edinburgh Asylum and infers that: "Accidents to the head do not loom largely therefore in the production of the insanity of the world." On the other hand Schläger⁷ found 49 out of 500 cases of insanity, to be traumatic. Sankey is silent on the subject as his cases were females in the Hanwell Asylum, principally. Pritchard⁸ quotes from Esquirol⁹ traumatic cases in private practice: 8 in 120, Salpêtrière 26 in 361, Charenton 11 in 256, total 45 in 737; of which 22 were from head blows or falls, and 23 *coup de soleil*. Worcester¹⁰ cites (J. Crichton Browne's West Riding Asylum Reports) that from April 1st, 1870 to the same date in 1872 there were admitted 42 such cases, fifteen times more numerous annually than in Edinburgh. Kiernan¹¹ found 45 in 2200 at Ward's Island Asylum, New York. While pathologist at the Chicago county asylum I ascertained 49 cases wherein traumatism was operative among 610 patients, and my report¹² divides them as follows: Causes ascertained 357, unascertained 253; of these 24 males, 3 females, had head injuries; 3 males, 1 female were sunstruck; 3 males

4. Agnew's Surgery, p. 304.

5. Bryant's Surgery, p. 200.

6. Mental Diseases, p. 300.

7. Zeitschrift der K. K. gesellschaft der Aerzte zu Wien, XIII, 1857, p. 454.

8. Insanity, p. 136 *et seq.*

9. Art. Folie, Dict. des Sci. Med.

10. Insanity and Its Treatment, p. 90.

11. Detroit Lancet, June, 1883, p. 539.

12. Chicago Med. Journ. and Examiner, April, 1884, p. 383..

had been subjected to intense heat, 1 male had become insane after a lightning stroke upon the head. In these the traumatism appeared to be the only cause, but in 2 male cases typhoid fever, in 1 male a fright, in 1 male and 1 female a tendency to hebephrenia, and in 2 males and 3 females heredity were associated; 3 males were epileptic, 1 male had been sunstruck in addition to having a head injury.

Mickle¹³ states that in 1221 cases of paretic dementia, tabulated in the 1878 Lunacy Blue Book for England and Wales, 3.1 per cent. was caused by sun-stroke and 4.6 per cent. by cranial injury.

The proportion of insanity due to blows and falls upon the head, overheating and sunstroke, from various authors, approximate from among all other forms of mental disease :

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| 6. | per cent. | Bucknill & Tuke (<i>Psych Med.</i> p. 97.) |
| 10. | " | Schläger (<i>Wien Zeitschrift, loc. cit.</i>) |
| 6. | " | Esquirol (<i>Dict. des Sci. Med.</i>) |
| .33 | " | Clouston (<i>Mental Diseases</i> , p. 300.) |
| 2. | " | Kiernan (<i>Journ. Nerv. and Mental Disease</i> , July, 1881.) |
| 8. | " | Clevenger (<i>Med. Journ. and Exam., loc. cit.</i>) |

The average proportion of traumatically caused to other forms of insanity is thus 5.4 per cent., ranging with different asylums from less than 1 up to 10 per cent. of the admissions. But for reasons to appear this is not the proportion of Traumatic Insanity.

It is in many cases difficult, if not impossible to determine whether the traumatism acts as the predisposing or the exciting cause of insanity. Heredity would undoubtedly precipitate matters after an injury and, we would think, subject such predisposed persons to a greater liability to injury where the neurotic or mental taint had developed enough to lead them into danger; but the recorded cases show that heredity is not necessary to the

establishment of this form of insanity, and, *a priori*, a maimed brain would be quite sufficient to institute a mental ailment without preceding causes.

Kiernan¹⁴ found inherited taint in 28 of his 45 cases. My records furnish 5 males and 3 females predisposed by heredity in 59 cases. Ten of the total were in private practice after leaving the asylum four years ago.

Bucknill and Tuke¹⁵ report a case resembling parietic dementia, whose father died insane. Verity¹⁶ a similar instance with an insane maternal grandmother and uncle, Brower¹⁷ gives three cases in two of which there was heredity; a paternal uncle, three paternal cousins and a brother insane in one of the instances, and a grandmother, two uncles and two cousins, all paternal, in the other case.

About the best deduction we can make from the cases cited is that *while heredity renders the individual with a head injury more liable to insanity than one with the same injury would be without the heredity, and while this predisposition plays a very important part in a large but undetermined number of traumatic cases, the psychosis may exist without any previous insane tendency, inherited or acquired.*

Plainly any constitutional vice, however obtained, that would enfeeble the resisting powers could act as a predisposing cause in this as in other divisions of mental derangement. Winslow¹⁸ believes "that the importance of head injury as a cause of insanity cannot be exaggerated," and further states: "In some instances accidents of the kind may not be followed by serious results, but in certain temperaments, or conditions of bodily health, and in particular predispositions, we may safely predicate the development of chronic disease of the brain as the result of neglected blows on the head. Injuries of this character occurring to persons of a strumous habit, or suffering long-continued debilitating diseases, impaired nutrition,

14. Journ. Nerv. and Mental Dis., July, 1881, p. 450, Table II

15. Psychological Medicine, p. 311.

16. Amer. Jour. Neurology and Psychiatry, May, 1882.

17. Alienist and Neurologist, Oct., 1883.

18. On the Brain and Mind, p. 440.

overwrought and anxious minds, or a constitutional liability to mental or cerebral disease, are frequently followed by serious and often fatal results."

Before arriving at what traumatic insanity is, it will be as well to dwell upon what it is not, owing to the confused idea conveyed by almost all writers except Spitzka.¹⁹ He states that "it does not accurately correspond to the ordinary psychoses, has distinct clinical characters, and is always, when found, referable to traumatism or to analogous causes." He allots only two pages to the subject, but tersely and effectively. Directly, or by implication, in many works, every form, from melancholia to senile dementia, has been ambiguously included as traumatic; but Kiernan²⁰ incautiously criticises Crichton Browne²¹ for this, when that observer merely noted that traumatism had preceded or complicated the development of cases of hypochondriacal melancholia 3, dementia 9, epileptic dementia 9, senile dementia 5, dementia with general paralysis 3, general mania 2, and one case each of acute, puerperal, recurrent and *a potu* mania, and a case of "amentia." The abominable classification of the English does not enable us to know whether delirium tremens or alcoholic insanity was meant, and as the traumatism in the "amentia" case was doubtless post-natal the list may probably be translated into imbecility, alcoholic, puerperal, recurrent insanity one each, dementia 9, senile dementia 5, epileptic insanity 9, paretic dementia 3, mania 3, hy. melancholia (paranoia?) 3.

I referred to two hebephrenia cases complicated by head injuries. These, with many in Browne's list, would be atypical, for aside from the fact that some psychoses may develop one upon another and an epileptic, puerperal or other case may be also traumatic, the traumatism may predispose to other forms, precisely as any other brain malady may. If the pubescent insane tendency pre-existed the injury could be the exciting cause, the hebe-

19. Manual of Insanity, p. 370.

20. Op. cit.

21. West Riding Lunatic Asylum Reports, Vol. II.

phrenia could be modified or aggravated by the trauma, traumatic insanity might co-exist with or be overwhelmed by the hebephrenia, so that the case might be one of simple hebephrenia with traumatism, traumatic insanity with hebephrenia, one or the other or even both well-marked, *according to the clinical symptoms*. This is the advantage of Spitzka's classification; there is something tangible about it; a prominent group of phenomena characterizes each mental disease. We cannot be bound to an ætiological *ignis-fatuus*. There is no justification for other than a clinical classification in the present unripe stage of mental science.

The puerperal case might or might not have become such with or without the head injury: heredity has more to do with that trouble. A well-marked case of melancholia, mania or any other mind alienation should not be included as traumatic insanity, even though the injury were the cause, *unless the clinical features of that disease are apparent*. A cerebral malformation may induce epilepsy, idiocy or paranoia, according to circumstances. It would be absurd to neglect the palpable result for the obscure ætiology, so all insanity following a head wound is not traumatic insanity, and the conclusions may be made that:

Traumatism may precede insanity and have no relation to the insanity, just as head injury is compatible with sanity.

Traumatism may predispose to traumatic, or other forms of insanity, especially alcoholic and syphilitic.

Traumatism may be the exciting cause of traumatic or other forms of insanity in the predisposed, as hebephrenia and paranoia.

Traumatism may modify, complicate or aggravate other forms without the clinical symptoms of traumatic insanity appearing. The latter may co-exist with other forms of insanity.

Traumatism may act as both predisposing and exciting cause, producing traumatic insanity by itself (Dickson, Luys and Schläger), but hereditary or other taint causes greater liability.

Instances of head injury during youth developing epilepsy at puberty and insanity at 50 are noted by Calmeil²² and Lasegue.²³ Esquirol²⁴ mentions a 3-year-old boy who fell upon his head and became insane at 17, with headaches in the interim. Rush²⁵ one at 15, who fell from a horse, sustained contusion and died insane a few years later. Voisin²⁶ and many others recite similar instances. Savage cites a slight head hurt in a lad causing insanity, but he was strongly predisposed by heredity.

From Kiernan's researches it appears that slight head injuries, from the insidious nature of the changes they set up, are as much to be dreaded, if not more, than the grave injuries. Winslow takes strong views as to the severity of apparently slight head injuries.

Duret,²⁷ Rush²⁸ and others note the slowness with which cerebral injuries manifest themselves; some observers mention 4 to 10 years and later. Griesinger²⁹ says that traumatism may produce insanity at once or several years afterward, that it predisposes even without visible cerebral lesion. Savage, Winslow and Krafft-Ebing call attention to the same fact, and the latter divides traumatic insanity into kinds produced immediately or later, sometimes many years. In 19 of Schläger's 49 cases, insanity began within a year of the accident, in the remainder in from 4 to 10 years afterwards.

Insanity may develop at any interval after a head injury, but usually several years intervene.

Under head trauma that affect the brain, with or without demonstrable cranial or cerebral lesion, may be included contusions, compressions, incisions, punctures, concussions, the effects of transmitted or direct violence

22. La Paralyisie chez les Aliénés.

23. Paralyisie Générale des Aliénés, Voisin.

24. Maladies Mentales.

25. Medical Inquiries and Observations, p. 28.

26. Op. cit.

27. Etudes exp. et clin. sur les Trau. Cerebraux, p. 137.

28. Op. cit.

29. Mental Pathology and Therapeutics.

(such as could be imparted by a jar of the spinal column), lightning stroke, sun-stroke, overheating, exposure to sudden alterations of intense heat and cold. Neck wounds through probable injury to the cervical sympathetic,³⁰ and injuries to the limb or trunk may occasion insanity.

Skae, Worcester, Dickson, Savage, Spitzka, Bucknill and Tuke, Clouston and the alienists of continental Europe uniformly include sun-stroke as a cause, and later works, such as Spitzka's "Manual," properly add general overheating, while Krafft-Ebing,³¹ Reich,³² Brush,³³ Schwartzer³⁴ report a transitory insanity from exposure to alternations of great temperature ranges. I treated one such case whose delusions were grandiose. There was considerable cerebral hyperæmia. He recovered promptly within two months of the inception.

Schläger observes that the injuries were followed by immediate loss of consciousness, by dull pain in the head or by simple mental confusion, but these are the customary accompaniments of all head hurts. Savage speaks of the nervous instability that sometimes follows with an increased liability to become affected by other exciting causes of insanity, and thinks that bone depression with membrane inflammation may often be the cause of the disorder, but acknowledges that altered conditions of brain nutrition may suffice.

Duret's "*Etudes*" form a handsome contribution to the subject. He explains *contrecoup* and other effects of head injuries, especially concussion, by the sudden propulsion of cerebro-spinal fluids from the point struck to opposite parts, often the fourth ventricle. This accords with Spitzka's idea that paretic dementia is a localized

30. Brower, Bannister and I published separately, and at several years' intervals, accounts of the progress of a case of this kind: one side of his face was flushed and delusions of persecution and suspicion were prominent, in *Jour. Nerv. and Mental Dis.*, 1879, and *Med. Jour. and Exam.*, May, 1884.

31. *Lehrbuch der Psychiatrie*,

32. *Berliner Klin. Wochenschrift*, No. 8, 1881.

33. *Amer. Jour. of Insanity*, 1882-3.

34. *Die Transitorische Tobsucht*.

lesion in the floor of that portion, accounting for traumatism so frequently inducing a form of that malady. The strain upon ventricles and blood-vessels could cause effusion and extravasation. As a valuable addition to cerebral pathology Duret's work has not had even decent treatment by the English writers.

The pathology of the subject cannot be simplified, for the results will vary widely between *post-mortem* findings and *ante-mortem* symptoms according to skull and brain structure, vascular peculiarities, age, habit, education, environment, nationality (the Irish develop greatest irascibility after head injury), and especially, what has been least considered, *the location of the injury*.

To facilitate study of these cases the record should note the seat of the hurt, the manner in which it was sustained and other information likely to impart clues as to the portion of the brain injured. The statement "head injury" is too broad to enable judgment of cause and effect relation. My observation leads me to believe that frontal head wounds are apt to induce the paranoia form of traumatic insanity; more diffused injuries, such as concussions, insolation, overheating, the paretic dementia.

Among the troubles which Spitzka, Clouston, Marce³⁵ and others describe as *sometimes* occurring are speech difficulties, vertigo, irregular alternations of stupor, agitation and imperfect lucidity, tinnitus aurium, photopsia, eye scotoma and scintillation, paresis of muscular groups, particularly those of the eyeball, anæsthesias and hyperæsthesias. These are probably the least constant but some are usual accompaniments of different forms of brain derangement and hence need not be dwelt upon in connection with the typical cases except as subsidiary evidences.

Epilepsy may supervene either in the form of *petit* or *grand mal*, with or without epileptic insanity, and as Kiernan says, not differing from the ordinary except that some ended in paretic dementia (a traumatic modification). He

35. *Maladies Mentales*.

had a larger percentage of epileptics from traumatism than other observers, who do not note so many. Ecchevaria³⁶ states that 35 in 321 epileptic insane were such from traumatism, and Gowers³⁷ found 92 epileptic cases in 1450 due to head injury. One of the most violent and dangerous epileptic maniacs I ever knew had a fractured skull.

Mania from traumatism is likely to be the recurrent furious phase characteristic of the occasional outbreak of traumatic insanity.

Hebephrenia has been disposed of, *supra*.

Melancholia admittedly rarely complicates or succeeds traumatism. Kiernan had but one case, the *attonita* form. This horrible derangement we can readily imagine could be caused by head injury.

Katatonias. I found one case with a head injury, but doubt its relationship beyond its having caused alcohol addiction. Kiernan found four head injuries among 30 katonias.

Stuporous insanity being a recoverable form, dementia would more properly include cases of traumatism resembling it.

Senile dementia. Traumatism could have but a problematical association. It never could cause the disease unless it precipitated impending senile brain involution.

Syphilitic dementia could occur through the injured brain or membranes affording a nidus for the post or pre-syphilitic poison.

Alcoholic insanity may co-exist with, precede or follow upon traumatism and be associated with it in every conceivable manner, for reasons given *infra*, under alcoholic complications.

Imbecility may result from traumatism, for obvious reasons

Recurrent mania. A case was reported by Crichton Browne, but the attacks may have been only the episodic furies of traumatic insanity. I observed one, a German

36. Epilepsy.

37. Epilepsy, p. 26.

aged 40, with a large scaphoid depression of the top of his skull from a fracture. When overheated he became volubly maniacal, but at other times *appeared* to be rational. (The "boodler gang" of county commissioners, part of which is now in the penitentiary, interfered with my means of studying this and other cases—a side comment to indicate the difficulties of the American non-political alienist).

The prognosis of traumatically induced insanity is unfavorable. Schläger attests this. Spitzka says: "as a rule progressive deterioration sets in and dementia terminates the history of the case." Marce also states that "the patient becomes progressively demented." All writers coincide in this. Where dementia follows swiftly, death does also; but other terminal dements from traumatism may linger an ordinary life-time.

To this point in the subject we have regarded many phenomena (but not all) that could be included as occurring in traumatically induced insanity or that have some association with traumatism, leaving the insanity of traumatism for separate inspection. Owing to authors not having fully differentiated this from other head injury forms, we have but little data for percentage calculation.

It is probably related to other insanity in the proportion of 1 to 2 per cent. About one-fifth of all head injury insane cases.

I would designate as traumatic insanity that which exhibited the constant phases that characterize it. The pathological term traumatic being used *in a clinical sense* and justified by the sufficient invariability of symptoms following demonstrable brain injury; nor would it be unreasonable to include under that head all cases presenting the characteristics whether head injury could be demonstrated or not. It would be as correct to infer the trauma or its equivalent from the symptoms as it would be to assert cerebral deficiency in idiocy regardless of the external cranial appearance.

Skae held that the symptoms, progress and termination

are sufficiently distinctive and characteristic to enable it to be considered as a distinct type of disease. Spitzka fully recognizes this, but places it, nevertheless, among his second or complicating, when it should be under the first or pure insanities. Proper acknowledgment that the brain changes are not *always* demonstrable would assign it to sub-group A, class first; but supposing this to be debatable, then it may properly fall into the second class as associated *with* demonstrable changes in the brain, especially where the form was that of paretic dementia, paranoia or dementia. But that author solves its location for his third class, sub-group B (constitutional insanity, essentially the expression of a continuous neurotic condition) by stating (p. 371) that it developed upon the "traumatic neurosis."

The objection to including traumatic in the pure group, when it manifests paretic dementia symptoms, can be met by the further observation that such forms are impure and were we to absorb a case under, say, paretic dementia, there would likely develop other co-existing symptoms, or the paresis would be too feebly marked, while the peculiarities due to traumatism were strongly marked. *Traumatic insanity is pure in the impurity of the psychoses it simulates.*

The maniacal excitement with which Skae stated that it usually began is most likely the fury which often calls attention to the disease which may have been previously apparent to an expert, for Schläger and others do not mention this kind of onset. Skae's further observations are well sustained: "A chronic condition, often lasting many years, when the patient is irritable, suspicious and dangerous to others; in many such cases distinct homicidal impulses exist; this form is rarely recovered from and has a tendency to pass into dementia and terminate fatally by brain disease." The "characteristic delusions," he additionally enumerated, as "those of pride, self-esteem and suspicion" are best separated into those allied to paranoia and paretic dementia.

Schläger speaks of "self-conceit, prodigality, disquiet and restlessness." These and other aspects of the subject may now be detailed *seriatim*. The first thing to occur as a symptom usually being

Change of character. This is very often only ascertainable by a comparison of the behavior before and after the injury upon testimony of relatives and acquaintances. Commonly the traumatic lunatic is described as "not being the man he was." These changes are often radical and consist of

Lapses of memory, as in epilepsy, more prominently than a general failure of that faculty. The memory cannot be said to be as acute as previously, and forgetfulness of names, persons, places and transactions are occasional to frequent, but the most notable are the memory *gaps*. As Spitzka says, entire periods of life may be obliterated from the mind, but in my cases these *lacunæ* were, so far as I could determine, limited to the epileptic-like, automatic furies, and to other occasions when insane acts were committed, during a few minutes or extending sometimes over many hours or days. As in other insanities, juvenile or olden events are more readily remembered than the recent occurrences.

Headaches and sleeplessness are noticeable, especially as preceding or accompanying the most troublesome periods of the disorder. Both conditions are apt to be hyperæmic and aggravated by constipation, liquor imbibing, business or domestic worry, etc.

Irritability, varying from occasional irascibility provoked by trifling affairs, an explosion of anger, a passionate manner, to the most violent outbursts of temper. Schläger found these to exist in 20 of his 49 cases. Usually the head is flushed at such periods, and there is a swagger and bullyism differing from the epileptic irascibility or *petit mal intellectuel*, which is attended with pallor, a cynical, sarcastic or sneering "hatefulness," rather than boisterousness. But the epileptic unconscious automatism, it is readily understood, may also appear, as

any peculiarity of epilepsy may develop from head injury. The usual sun-stroke or traumatic irascibility, to a lesser degree, can be observed in many cooks who are "hard to get along with." Its cause is in cerebral turgescence from heat.

It would seem as though many peculiarities such as these were exactly epileptic, and this probability should be borne in mind and studied.

Suspiciousness is a frequent feature, as in phthisical insanity. In the neck wound case, I reported with Brower and Bannister, every delusion the patient, Kelly, had was accusatory. Being a policeman he imagined everyone a thief. Meyer³⁸ reports a case which manifested delusions of suspicion after being struck on the head by a large weight, later he becoming paretic.

Long apparently lucid intervals. It is not best to omit the "apparently," for there is no telling at what moment the insanity may explode in an outrageous act, and while hallucinations and other features of insanity exist, even though the patient may talk and act rationally, the insanity is not absent. Personal inspection of the patient may reveal nothing beyond a slight peculiarity of manner, or not even this. The speech may or may not be affected, the pupils may be dilated, contracted or normal, and respond to accommodation tests and to light. There may or may not be paresis of muscles or other determinable physical impairment, and such cases in asylums are often capable of doing routine work in an intelligent manner, but they should be always looked upon as dangerous.

Homicidal and suicidal impulses, as frequent and characteristic occurrences in traumatic cases are recorded by Spitzka³⁹ and Clouston,⁴⁰ who cite a case.⁴¹ Many of Bucknill and Tuke's⁴² descriptions of homicidal impulse read like

38. Archiv. für Psychiatrie, band 2.

39. Manual of Insanity, p. 370.

40. Mental Diseases, p. 298.

41. Op. cit., p. 244.

42. Psychological Medicine, p. 254, et seq.

traumatic cases, but epilepsy (which may have had the traumatic origin) is discussed in their connection.

Verity⁴³ narrates a case where the pain and heat appeared upon the side of the head opposite to the part struck, with mental degradation, drunkenness, hallucinations of hearing, disagreeable in character. Three years after the hurt he struck and threatened to kill his wife; at this time he was sober. Two days later he committed suicide by hanging. Brower⁴⁴ observed three cases. One was an army captain, æt. twenty-three, wounded in right parietal region, suffered from headaches and insomnia and four years later became irritable, resentful, quarrelsome and dissolute. His wife abandoned him on account of his conduct. He went to France and became conspicuous for his outrages as a leader of the Commune. He committed a murder and mail robbery. "The immorality was obviously pathological and the case has in it the evidences of logical perversion." The second case, with heredity, hurt in the army, upon the head, underwent character change, was quarrelsome and subject to fits of ungovernable fury, suspected his family of a desire to poison him. After an attack of epileptic convulsions, his delusions of conspiracy and suicide increased. He carried a knife and pistol for self-defence. The Catholic Church and clergy, to which he had been devoted, he especially regarded as persecuting him. He had attacks of fury, in one of which he killed his wife and then attempted suicide. The Illinois prosecution claimed the man's irregularities to be due to whisky. The judge instructed that if the insanity was the result of inebriety it was no defence, which resulted in the following verdict: "We, the jury, find the defendant guilty in the manner and form charged in the indictment, and fix his punishment at death by hanging. We also find the defendant insane at the present time." The prisoner committed suicide the next day. The third case, æt. fifty, strong insane heredity, known as "silly" and "crazy" among his companions, sustained a concussion at forty-two years of age and a year later another. He squandered his property, had parietic delusions of great wealth, boasted of being the third son of God, and in June, 1878, in a public place, in the presence of several persons, without warning or evidence of passion or excitement he shot and killed his wife. Upon examination by Drs. Brower and Lyman he had pupillary inequality, nystagmus, fibrillary twitchings of muscles of face, back, thorax and legs, the jail attendants stated that he slept scarcely at all, feared his food was poisoned and refused it. E. P. Weber, the prosecuting attorney, conscientiously abandoned the case and the jury found the prisoner insane.

In fourteen of Schläger's forty-nine cases "There were suicidal attempts with loss of memory and confusion." Pritchard⁴⁵ declares "The propensity to suicide is very often combined with the impulse to homicide," and that "acts

43. Amer. Journal Neurology and Psychiatry, May, 1882, p. 196.

44. Alienist and Neurologist, Oct., 1883, p. 650.

45. On Insanity, p. 284.

of suicide like those of homicide are generally preceded by a morbid change of character and habits. Individuals who have been cheerful, active, animated, taking a lively interest in the pursuits of life, in the society of their friends, in their families, become melancholy, torpid, morose and feel an aversion to their relatives or most intimate associates, become listless and indifferent. These appearances have often been observed to be the preludes of some attempts at suicide, and have sometimes put the relatives on their guard and have led to the prevention of the catastrophe."

And Savage⁴⁶ very justifiably writes: "I would say that in considering a murder, the first question to be asked is, What was the assigned cause for the crime? was it the natural development of surroundings and habits? To my mind certain crimes are themselves sufficient evidence of mental unsoundness. If a person, with or without a sudden shock, become completely changed in his domestic relations—if a man who is a good husband and a kind father kills wife or child, without any established delusion, I think the crime itself is sufficient to cause a *prima facie* belief in the existence of mental unsoundness. The chief points, then, are the apparent causelessness of the crime, the utter want of relationship between the crime and the supposed end to be attained, the relationship between the crime and any delusions, the establishment of any insane or nervous inheritance, or the proof that the patient himself at one time or another has been of unsound mind or epileptic. Next after the consideration of the causation of the crime itself and its surroundings, it is important to obtain evidence as to acts immediately preceding and immediately following the deed, as well as to find out the details."

In many cases of traumatic insanity murders, the previous insane predisposition is emphasized by a number of immediate relatives having been insane.

Alcoholic complications are very numerous, and where

46. On Insanity, p. 469.

one exists, a murder, especially a wife murder, may be the result of this, as alcoholic lunatics influenced by their marital infidelity, delusions and hallucinations commit peculiarly horrible crimes of this kind. A drunken katoniac disemboweled his wife in Chicago, running into the street in his nightgown. He was sent to the penitentiary after puzzling the doctors with the alternations of that disease. (Periodically the daily papers recount the acts of an ordinary katatoniac as a "wonderful case baffling all the physicians").

Spitzka (p. 254), mentions Lennon, a New York alcoholic, who cut his wife up in regular checker board pattern.

That both alcoholic and traumatic insanity are murderous might raise the quibble in court as to which the crime was attributable. As the head injury impels to the alcoholic lunacy it should not matter, but there is a psychological interest in the disentanglement. The delusion of the wife's unfaithfulness might shift the homicide upon the liquor lunacy.

1. Alcoholism may in the ancestry predispose through transmitted nervous or mental instability, so that traumatism will more likely induce insanity in a descendant.

2. It renders the individual liable to accidents, despite the old saying that drunkards escape injury.

3. Previous alcoholic habit complicates and aggravates traumatic cases as it does pneumonia, and may be the determining factor of insanity, where the abstemious, with the same injury would survive and may remain sane. It retards recovery and alcohol after a head wound or sun-stroke readily congests the brain, a condition especially to be avoided.

4. A proneness to alcoholic addiction is observed as remarkably frequent after a head injury, sun-stroke or overheating.

5. Traumatic cases are quickly, readily and badly affected by small amounts of liquor which previous to the injury would have had little if any effect. "A little will

always make them maniacal and often very dangerous and homicidal," says Clouston.⁴⁷

6. Alcoholic insanity may be superimposed upon traumatic and many degrees of these two psychoses combined are observable.

7. The delusions peculiar to the alcoholic insane are sometimes found in traumatic cases complicated with alcohol, even though the alcoholic insanity may not fully exist. This is an important observation.

8. As a probable majority of head injury cases are addicted to liquor the relations of alcoholism to this insanity should be clearly understood as of medico-legal importance, for the law makes a distinction between acts done through insanity from liquor continuously used and those occasioned by liquor "voluntarily" taken. Fearing that advantage may be taken of the plea if drunkenness secured acquittal the legal fiction remains, to be swept away by further advance in civilization, that every drunkard is responsible for his crime. Since this is in the statutes there should be careful discrimination of the effects of alcohol in criminal cases. It should be known that injury predisposes to alcoholism and that one or the other psychosis may predominate in the same individual.

Frequently we have to combat the error of an effect or product of insanity being mistaken for the cause; and nowhere is so much injustice exhibited as in these instances.

I knew an officer of the regular army whose eye was shot out and fore-brain injured during the late war. He was jovial, but dissipated, and occasionally irascible, especially when marching. He was thrice court-martialed for acts committed under liquor influence and threatened with cashiering. He had no sympathy from his brother officers, who were harsh in their condemnations. His previous brilliant record for bravery stood him in good stead, whereas the pathological condition should have been recognized in mitigation or excuse. A fireman is in an Illinois asylum with a battered head received in the course of duty. He was previously temperate, and as he drank heavily afterwards, this was blamed as the cause of the insanity and his wife is refused the customary pension.

47. *Op. cit.*, pp. 298, 299.

If we adopt the Earl of Shaftesbury's dictum (he was in a position to make such an affirmation, being the head of the English Lunacy Commission for fifty years), that fifty per cent. of all insanity is due to alcohol, I think that careful tabulation will show much of this alcoholism to be induced or precipitated by cranial injury, which latter becomes the real and the former the apparent cause.

Delusions, illusions and hallucinations are those of being persecuted and are often hypochondriacal, as in paranoia; those of grandeur as in paretic dementia; those of poisoning and marital infidelity as in alcoholic insanity.

The divisions of traumatic insanity I would suggest, are as follows:

Traumatic dementia, which usually runs a rapid course to death, and follows upon severe injuries.

Traumatic paretic dementia. This is not the ordinary paresis, but a mixed form blending the peculiarities of the traumatic with those of a shifting, illy-defined paresis, and often linked to a prominent enough paranoia, but the latter is modified by the paresis which governs the prognosis. Mickle⁴⁸ says: "In the cases which have come under my observation where cranial injury has conduced to general paralysis, it has in the majority served to play the part of a predisposing rather than an exciting cause." Closer study of these with other traumatic patients would enable him to see the injury alone sufficient in the majority, for it is too frequent to be otherwise. Sankey⁴⁹ tells of a patient injured by a fall, who was a week insensible, recovered and two years later paretic dementia set in. In Burman's statistics⁵⁰ 103 paretic dementes were such through sun-stroke in 7, and head injury in 12 cases. In 1221 cases of paresis stated by the "English Lunacy Blue Book" for 1878, 3.1 per cent. were caused by sun-stroke, 4.6 per cent. by head

48. Jour. of Mental Science, Jan., 1883.

49. Lectures on Mental Disease, second ed., p. 387.

50 and 55. Bucknill and Tuke, Psych. Med., p. 329.

injury.⁵¹ Mickle⁵² discusses the influence of cranial injuries and heat as predisposing and exciting causes. Calmeil⁵³ speaks of similar results from exposure to great furnace heat. Brierre de Boismont⁵⁴ affirms that paretic dementia may be preceded two or three years by great irritability or menace of suicide or character change and memory failure. It would be useful to know whether such cases were not traumatic, but the author cited gives us no clue to this. Burman and Calmeil⁵⁵ unite in calling attention to the frequency of paresis in the army and navy. The hypochondriacal, suicidal and homicidal paretics of Mickle, with delusions of persecution, it is noteworthy, were military, a class particularly subject to head hurts and heat exposure. Careful inspection of Mickle's cases show a likelihood of a much larger undiscovered number of traumatic patients. While several of his soldiers were sun-struck and one was hit by a poker, the evident traumatic symptoms detailed were not referred to as such, and these same symptoms existed in several other cases in which there was no mention as to whether there had or had not been head injury. The precedent eccentricity, suicidal attempts, irritability, passion, insomnia, alcohol addiction point to a probability of traumatism in his Cases X., XII., XIII., XV., and XVI. Case XIII. had early epileptic convulsions, and XV., epilepsy eight years before.

While an idiopathic epilepsy may become paretic and neither ailment be attributable to trauma, the epileptiform seizures of paresis should be studied with regard to traumatism, especially if the fits occurred early in the disease or heralded it, as affording a possibility of traumatism. At least as traumatism causes epilepsy and paretic dementia, it would be well to determine to which of the three conditions the spasms were due, and whether in traumatic paretics the epileptiform phenomena, from *petit*

51. Mickle Gen., Paral. of Insane, p. 102.

52. Op. cit. pp. 98 and 108.

53. Mickle, loc. cit.

54. Annales d'Hygiene pub. et de Med. Legale, 1860.

to *grand mal* or their similitudes, did not occur more frequently or sooner than in other paretics.

Parchappe⁵⁶ and Calmeil⁵⁷ and Burlureaux⁵⁸ assign epilepsy as a cause of paretic dementia. Let us next ascertain the cause of the epilepsy.

I have observed loquacity, prodigality and expansive ideation develop in a case six months after a head injury without headaches, insomnia or intemperance, with decided *petit mal* about weekly. He fell thirty feet causing stellate fracture of right occipito-parietal and post-occipital regions. He was maniacal immediately after the fall and semi-comatose two months. He was treated by Drs. A. J. Baxter, Otto Schmidt, J. C. Oswald and myself, during the year that has elapsed since the accident. Irritability does not occur often. His abstemious life has aided him greatly.

Traumatic paranoia may occur with or without the parietic symptoms simultaneously or successively thereto. I should judge from the accounts of the "American crow-bar case" that paranoia was the prominent, if not the sole, manifestation in that instance. Left frontal hurts or heredity appear to determine the appearance of this logical perversion.

There are cases wherein paranoia, epilepsy and paretic dementia are united, where one predominates or persists to the exclusion of the other form.

Analysis of Mickle's cases yields the remarkable fact that Cases X., XII., XIII., group 3, paranoia with paresis, *post-mortem* proved the left cerebrum most diseased; in case XV., group 4, with epilepsy, the paresis predominated, and in the paretic and alcoholic Case XVI., group 4, the right cerebrum was most diseased in both.

Traumatic insanity without the paresis, paranoia or dementia might exist and be evident in furious outbreaks, but I have not seen a case nor can I find any record of the absence of features allied to the psychoses mentioned.

The treatment is to avoid sun or other extreme heat, liquor, costiveness, irregularity of habits, irritating influences, business aggravations or close application to any

56. *Traité de la Folie.*

57. *Traité des Malad. Inflam. du Cerveau.*

58. *Folie Paralytique.*

pursuit, and to combat with ergot, bromides, antipyrine and derivatives generally, the insomnia and other products of cerebral congestion. Massage from the shoulders downward and hot baths, to diffuse the circulation, prove useful.

I. *Traumatic dementia.* W., æt. forty, depressed contused wound left upper frontal region from a falling brick, in two years became crochety, irritable, intolerant to liquor, sleepless. Memory and business ability suffered impairment. Without warning one day broke up furniture and raved about his house. Mentally deteriorating.

II. *Traumatic dementia.* L., æt. forty-eight, mechanic, vigorous, cheerful and industrious, was struck by flying stone in left parietal region and within a year was helpless, irritable, sleepless, easily affected by small draughts of liquor, "it went to his head and made him crazy." Lost memory for recent events. Repeated questions he had asked but a few moments before, photophobia, hemiparesis upon same side as the scalp wound (*contrecoup* is notably frequent in these cases, but Duret's researches account for it). He lost all relish for music and reading, of which previously he was very fond, and presented the appearance of advanced age. In a civil action for damages a physician stated that electricity, the dynamometer, thermometer and æsthesiometer were valueless as tests, and he had not used them, that bromism (without foul breath or eruptions) and drunkenness (it was proven that L. was temperate) were probably the causes of all the symptoms. Several ignorant doctors testified on both sides, with others who were well informed, and the issue of the mess was against the plaintiff. Time will fully corroborate the position I took in the trial, for L. is growing more demented.

III. *Traumatic dementia.* A railroad official named Murphy was brought to me three years ago, after being pounded upon the top of his head with a large rock. He soon after became stupid, could not describe his feelings or condition, had forgotten nearly all he knew, was sleepless and troublesome at home, but too demented to be furious. At an early stage of his insanity he had faint paretic ideas. He died, I was told, in an asylum last year.

IV. *Traumatic dementia.* John G., American, machinist, lightning marks along forehead, neck and left side. Was struck in 1880, suffered mainly pain in head and stomach, but was conscious and talked rationally till the third day when left hemiplegia occurred and lasted a year. The paralysis included facial with ptosis. Tongue and vocal organs first to recover in 1881, when insanity became evident. Irritable, homicidal, suicidal, destructive, noisy, suspicious, erotic, jealous of wife. In 1883, a terminal dement.

V. *Traumatic paretic dementia.* D. S., negro, teamster, æt. fifty-four, scar on right forehead; arrested for larceny, but found to be insane, well behaved between furibund attacks, during which he had paretic delusions of great wealth. Hallucinations of sight and hearing. Saw God in a chariot

once, who commanded him to escape. It required six men to subdue him, as he had unusual strength. Died of pneumonia a year after insanity began. Medulla small. Isthmus cerebri, left Rolandic, frontal parietal and temporal regions, arterial engorgement, extreme in occipital portion. Capillary extravasations in course of superior longitudinal sinus, streaking the dura with the rusty color often found in alcoholic insanity. Veins of left side cerebrum fuller than right.

VI. *Traumatic paretic dementia*. M., æt. thirty, machinist, struck in the forehead and top of head by conductor's lantern and soon after began drinking heavily, developed irritability, memory and business ability impairment, sleeplessness and prodigality, and is advancing to dementia.

VII. *Petit mal and paranoia following traumatism*. B., æt. twenty-five, clerk, paranoiac father beat him over the head repeatedly when he was young, had attacks of *petit mal*, was temperate, but irritable (except to wife and mother), suspicious, had memory lapses and delusions of persecution for which a direction and basis was afforded by some abusive anonymous letters he claimed to have traced to two women in his office. He purchased a revolver and deliberately shot both of them in their heads, but they made fair recoveries. The extreme penalty would have been twenty-eight years, but he was sentenced to six years in the penitentiary after the State and defence attorneys conferred with the judge. Public feeling ran high, and as I testified to the insanity I received some newspaper criticism, such as this:

"The doctor testified that *petit mal* was more dangerous to the intellect than the convulsions of epilepsy. *Petit* means little: how can the less include the greater danger?"

"Why do not these experts prevent crime by timely warning instead of waiting till it is done?"

That is precisely what every expert does when he can, and what I have repeatedly done when the opportunity presented, but people seldom seek medical advice in such cases until crime is committed by their insane friends.

VIII. *Traumatic paranoia*. F., æt. twenty-eight, wounded on head in accident on railroad, from which he alone of all the passengers in his car escaped, some of whom were burned alive within a few feet of where he was pinioned by the debris. In a year he became a decided paranoiac, suspicious, irritable, quarrelsome, so much so his attorneys found him unmanageable and compromised damages with the company.

IX. *Traumatic paranoia*. C., æt. thirty, butcher, energetic, habits regular; was struck by locomotive, small scalp wound on head healed completely; unconscious, delirious and vomited several days. Within six months his memory became impaired, lost his business ability. Sleepless and restless at night, headaches persisted, suffered from dizziness, dimness of eyesight, photophobia, tinnitus aurium and defective hearing. Extremely irritable and suspicious, feeble, stupid, sullen with lapses of memory, forgetful of faces and places, the least liquor "goes to his head" and makes him worse. His bed-fellow stated that he several times rose in the night with hallucinations of burglars breaking in. Twice he fired

through the door at imaginary persons he claimed to have heard. He married a girl whose language he did not understand and who could not understand his, while unable to provide for a wife. Beyond a few frontal rugæ, there was nothing in his appearance to indicate insanity. Dr. Edmund Andrews was called by the judge and I by the patient in a civil action against the railroad company. Dr. Andrews agreed with my statement of the case and C. was awarded \$5,000 damages.

X. *Epilepsy and dementia from traumatism. Recovered.* K., æt. twenty-six, Irish, when thirteen was struck upon left side of head with a club. Epileptic convulsions every three to six weeks since; irritable, stupid, could not learn to read or write, progressing to dementia. An osteal node protruded an inch behind top of left ear. At my request Dr. A. J. Baxter removed this exostosis by trephining and I kept the patient under treatment thereafter to avert the headaches which gave warning of the attacks. Since this operation in 1885 he has fully recovered mentally and from the epilepsy.

XI. *Occipital injury with optic hallucinations and without insanity.* J. H., æt. forty-two, merchant, had fallen upon occiput when a boy of twelve and suffered frequent pain about the nuchal location, growing worse with age. He drank wine, but not excessively. No mental impairment evident aside from peculiar optic hallucinations, interesting from the cuneus gyrus in the occipital brain being the psychic optic center. He had been treated for tremens, which he resented in passionate outbreaks. I induced him to go to the Alexian Hospital and lessened the vascular stasis in the back of his head by derivatives, and he was soon attending to business after having lost several months' time. His room would be filled with apparitions of his friends and he repeatedly asked me how often I had called to see him during the day when it was my first visit in the morning. He was annoyed by being unable to distinguish the hallucinations from the real personages. As he had no auditory hallucinations I taught him to compel all whom he saw in his room to speak and he was pleased with the result, for the apparitions would not answer him, and his reason aided this discrimination.

XII. *Traumatic predisposition to, but without insanity.* A. W., æt. forty-five, builder, was sun-struck during late war, and often irritable and sleepless with headaches, but not insane. In 1881 was very much reduced by neglected remittent fever, and I gave him ten grains of quinine, which developed a maniacal attack; a second dose brought on a similar fury, but by combining with hydrobromic acid I was enabled to increase the quinine even more. Kiernan⁵⁹ first called attention to insanity induced by quinine. This instance might explain it as occurring in persons with some abnormality of cerebral circulation to whom congestion would be dangerous.

XIII. *Paranoia with traumatic insanity and alcoholism.* Peter Deegan, æt. sixty, farmer, had lived in Ozaukee county, Wisconsin about thirty years, an Irishman, surrounded by Luxemburgers with whom he was incessantly at war. He had been beaten over the head with a club and had

59. Alienist and Neurologist, 1883.

fallen out of wagons upon his head during drunken bouts, and, to use his own words, "swam in whisky." He turned his family out of doors and was cruel to his children in many ways. There was evidence that his sister and himself were primary paranoiacs. She was hemiparetic and passing into dementia. Both of them saw and talked to the fairies or "good people," left food out of doors for them, and had delusions concerning the dead not compatible with their professed religion. Deegan, in a dispute over a trivial matter (a wagon load of straw) brought two guns from the house, one of which he discharged into the thigh of a neighbor, from the effects of which he died. On a change of venue he was tried at Sheboygan, Wis. The evidence was overwhelming as to the traumatic and alcoholic nature of his insanity, but there was great popular prejudice against him, and he received a twenty years' sentence.

A medical politician swore that there was no such thing as alcoholic insanity, it was only drunkenness, that there were no American authorities on insanity, that the Germans had never added to our knowledge of the subject, that he would not use deceit in examining a prisoner suspected of simulation, he would inform him that he was a physician and tell him what he expected to elicit by tests, that it was unfair to spy upon a prisoner to this end. He defined insanity as a "disease of the brain affecting the mind, causing the person to act, think and feel differently from usual," and acknowledged, when asked, that insanity was not always a disease of the brain, but claimed, in answer to another question, that he would not "think, act and feel differently from usual" if he were set down unexpectedly in the middle of China, or were he to sit down upon an upright pin point.

The trial lasted more than a week, one day of which I spent upon the stand detailing the essentials of traumatic and alcoholic insanity. I am indebted to the medical fraternity of Sheboygan county for a kind reception. Nor is it for this that I affirm the high grade intelligence and education of these "country doctors." They are better equipped in this regard than the average city medical man.

XIV. *Traumatic paranoia with alcoholism.* Mathias Busch, æt. thirty-two, German, brewery beer vender. Grandmother threw herself in a well while insane, father "eccentric," a paternal uncle John insane and confined in a cell in his own house. A son, Henry, of this uncle is in the Jacksonville Asylum, insane; another paternal uncle, Fritz, was insane, who had two daughters, one of whom died in epileptic convulsions and the other gave birth to two idiots.

Busch had been struck on the left forehead when a boy, the scar is still visible; had also a punctured wound in left temple at outer angle of eye from a pitchfork thrust. He had twice been sunstruck in addition. He had been industrious and kind to his family up to the date of his first sunstroke, six years ago, when stupid and depressed attacks followed with occasional irritability, and drink affected him more than formerly. His occupation led him to drink considerably. He suspected his wife of being unfaithful at times. These troubles with headaches and sleeplessness increased after the second attack, but he transacted his business as usual with occasional moroseness and accusations against his wife. Three years ago he attempted to commit suicide with a pistol.

A week before the murder his insanity was noticed by Mr. McAvoy, the president, and Mr. Ortseifen, the manager of the brewery. Busch wildly told them that he was being persecuted by the brewer's union (of which he was not a member, but thought he was). He told others that his wife had tried him twelve times in the brewery and at other times in the lodge (an insurance organization, the benefits accruing only to his wife upon his death). These statements of trials were proven to be absurdly unfounded. He bungled the beer-books of his customers, refused to talk to anyone, as he had some hypochondriacal delusions concerning his throat, but occasionally forgot this and spoke. Customers complained to the brewery and an agent accompanied him on his rounds, after which he was suspended, but he refused to work anyway, as he said "every one is against me."

February 2nd, 1888, he talked of committing suicide and accused his wife of "being in a corner with men before his eyes," and said that her hair was mussed and clothes disarranged; all of which was an hallucination. His wife appealed to friends about this time, saying: "Mat is going crazy, he acts foolish and does not sleep at all." His manner became more insane until the afternoon of February 6th, when he came into the house helped his wife prepare dinner, kissed her and the baby, and arose from his chair, went to his wife, laid her head on his shoulder as though to caress her, and drew a butcher knife across her throat severing the carotid. Mrs. Schenk, an aunt of the wife, cried out to Busch: "Look out, the knife is sharp!" He answered as though surprised at her interference: "Let me!" Mrs. S. cut her fingers in trying to interpose her hand. When arrested he was bending over the corpse, looking into the gash in which he had his fingers. Some said he had thrust a handkerchief into the wound, and that he grinned when asked why he did the horrible deed.

He did not sleep well in jail, talked and acted "queerly." Had an illusion of his cell mate being "Katy," his wife, and addressed him as such, trying to kiss him. Twice he attempted suicide in prison, once with his suspenders, and the second and nearly successful time with his bed sheet torn and knotted for the occasion. Artificial respiration and an hour's hard work restored him. He had tinnitus aurium and hallucinations of sight and hearing. He told me that some said his wife was dead, but that as he heard her talking and singing to him he was puzzled and did not know what to believe. Evidently at times he would accept the statements of others, for he wrote to a friend to bury him next to his wife. At one time in jail he complained of a bone in his throat, and, because there was none there the newspapers brandished this as evidence of his pretending to be insane. He talked rationally when spoken to and made no attempt to feign. Incarceration improved him, through cutting off his drink and regulating his habits. He was watchful of the court proceedings, and at times stolidity gave way to evident interest, just as any other traumatic or paranoiac might. He did not seem to be able to recall the events of his crime. His pupils were dilated, but responded to the usual tests as normal. Hearing was not impaired. Heart sounds feeble and its action was sluggish.

The fact that he was capable of being controlled to some extent in

jail by threats was urged as evidence of pretence on his part, when every asylum attendant, with or without warrant, uses this method effectually with troublesome patients, and some political asylum superintendents bluff their cases by swaggering through the corridors with jack boots, long hair and pistols.

Busch was said not to be insane because he had not the appearance of an insane person (the lay idea of the genuine article, derived from novels, being one with bristling hair, protruding eyes and startling behavior) Apropos of this a grand juryman doubted the insanity of a quiet, sensible-spoken woman in the county asylum, but remodeled his opinion when she returned to him with tinsel crown and other gew-gaws, introducing herself as the queen of song and tragedy. A negress was being sympathized with by another visitor as unjustly incarcerated, owing to her modest and rational behavior, when she launched a murderous kick which nearly ruptured his perineum.

An "expert" for the State swore that Busch was feigning traumatic insanity, but could not describe how that was when the prisoner appeared to be rational. He was further unable to enumerate any of the different forms of insanity, and when asked the difference between monomania and mania said that the first was "off on one subject while the other was off on several;" that the maniac's memory was always impaired. He had never heard of katatonia or hebephrenia and claimed that the murder was the product of an ordinary beer drunk. This alienist defined an insane delusion as a faulty idea having no foundation in fact, and a hallucination was one that had such foundation. Furthman and Walker, former assistant States' attorneys, defended the case, and the latter asked, "If a child believes the moon to be made of green cheese is not that belief a faulty idea not founded on fact, and is the child therefore insane?"

The trial lasted two weeks and was ably conducted by the attorneys, extraordinary diligence being used to procure testimony of Busch's antecedents and behavior before the murder. Less energetic and astute charge of the case would have left the insanity badly sustained.

The jury found Busch guilty but sentenced him to the penitentiary for life, a most illogical verdict, for were he sane, under the law wording he should hang; and if insane, the asylum and not the penitentiary, is the proper place for him. He should not have been liberated under any circumstances, if sent to an asylum. It was doubtless the expectation that he might escape from an institution for insane that inspired the verdict.

In some States there is provision made for insane criminals in special asylums. Juries usurp the functions of legislatures and perjure themselves when they endeavor to compromise between public clamor and their disinclination to condemn the insane to death. The abolition of the death penalty and provision for insane criminals will solve the question, as, except among savages, the intent of the law is not vengeance but the protection of society.

Certain Localized Lesions of the Brain and Their Practical Relation.*

By J. T. ESKRIDGE, M. D., Colorado Springs, Colo.

AT our last annual meeting I read a paper entitled "Cerebral Localization." In it I endeavored to review the subject, and gave the conclusions upon which the experimental physiologists and clinico-pathologists are nearly unanimously agreed.

To-day I propose to consider certain localized lesions of the brain and their practical relations to operative procedures. It is now well known that we may have tumors, abscesses, hemorrhages, limited meningeal thickenings, and possibly spots of suppurative meningitis; as is sometimes found in pachymeningitis, occurring in certain portions of the brain, which can be easily reached by the surgeon without the operation endangering the life of the patient. Lives which were formerly left to succumb to the ravages of brain disease, may now be saved by timely operation interference. I shall try to point out the localizing symptoms of lesions only in those portions of the brain available to surgical operations. I shall have nothing to say directly, of disease on the basilar surface of the brain, in the pons and medulla, or of the cranial nerves, and shall only refer to lesions of the great ganglia of the brain for the purpose of diagnosing them from lesions in the cortex and centrum ovale. Of course I have nothing new or original to offer. My paper consists of gleanings from the best available authorities. These I hope to present in a systematic form, so that they may aid in the diagnosis and treatment of cases in which surgical interference for the relief of brain symptoms is demanded.

It is necessary for us to bear in mind that whilst in the vast majority of instances one side of the brain is directly associated with movements of the opposite side

* Read before the Colorado State Medical Society.

of the body, there are exceptional cases in which the nerve fibers coming from one side of the brain innervate the muscles of the same side of the body. From ninety-one to ninety-seven per cent. of the fibers of each pyramid coming from the brain cross over to the opposite side of the cord and pass down in the posterior portion of the antero-lateral column, forming the crossed pyramidal fasciculi. In exceptional cases, about ninety per cent. of the fibers fail to cross, whilst only ten per cent. decussate. In such a case, were hemiplegia to follow brain lesion the paralysis would be on the side of the brain injury, and not on the opposite side of the body, as is usually the case. It seems to me, therefore, that if distinct localizing symptoms of a brain lesion warranted a surgical operation, which should fail to reveal any lesion, we should be justified, if the case was otherwise desperate, in trephining over the corresponding portion of the opposite hemisphere.

In some cases conjugate deviation of the eyes and turning of the head aid in determining the side of the brain involved in lesions which are attended by unilateral paralysis or spasm. The eyes roll upward and look to the side toward which the head is turned. The head can be easily straightened, but if left to itself it will resume its original position. In lesions anterior to the pons varolii the deviation is toward the affected hemisphere if paralysis exists, but away from the affected side of the brain, in irritative lesions, attended by spasm. The opposite holds good in paralytic and irritative lesions in the pons.

The cortex of each cerebral hemisphere has been divided into four, more or less, artificial regions. The first is known as the prefrontal region. Its posterior upper boundary, on the surface of the head, is about in the position of the coronal suture. On outlining it on the surface of the brain, it is all that portion of the frontal lobe anterior to an oblique line running nearly parallelly with the fissure of Rolando, and passing through the base of the second frontal convolution. The prefrontal

region appears to be insensitive and inexcitable. We may have tumors or extensive abscesses in this portion of the brain without there being any distinct localizing symptoms, especially where the lesion is unilateral. In some cases disease of one prefrontal region is attended by certain changes in the patient's mental condition. He may be more apathetic and drowsy than in his normal condition. In one case of abscess of the right anterior lobe, which I reported to the College of Physicians, of Philadelphia, the patient, a man, was drowsy, apathetic, and became quite irritable for a length of time before his death. In that case considerable chronic meningitis over the anterior convex surface of the brain existed. This probably accounts for the irritability of temper that was so prominent a symptom. It must be admitted that we have no reliable and definite symptoms indicating lesions in the prefrontal regions of the brain. The position of external injuries, disease of the nasal fossæ, or tumors in the orbit, occurring in cases suffering from obscure brain symptoms, should aid us in locating lesions in one or both prefrontal regions.

The occipital lobe is that small portion of the cerebrum posterior to the parieto-occipital fissure. It seems to be possible to have quite extensive lesions in one or both occipital lobes without their giving rise to very definite localizing symptoms. There has been considerable controversy between certain experimental physiologists concerning the exact seat of the visual center. Ferrier, in discussing the functions of the occipital lobes, as ascertained by his experiments on the brain of the monkey, says: "I have found as the result of numerous experiments, that electrical irritation may be applied to the occipital lobe without any objectively discoverable reaction. Neither does destruction or complete removal of these lobes singly, or on both sides, cause any appreciable sensory or motor disturbance. Animals so mutilated continue to see, hear, touch, taste and smell, and retain all their powers of voluntary motion. The results

of destruction, like those of irritation, are therefore mainly negative, and do not succeed in throwing very clear light on the functions of these regions. In one or two instances I should mention that there seemed to be some affection of vision; but in these cases, I found that the lesion had extended beyond the occipital lobes into the angular gyri; while in those in which the lesion did not extend beyond the occipital lobes, no such symptoms occurred." In the second edition of his work on the "Functions of the Brain," Ferrier admits that the occipital lobes in connection with the angular gyri are concerned in vision, but just what part the occipital lobes perform, it is almost impossible to determine from his own statements. Some of the earlier experiments of Horsley and Schäfer seemed to confirm the views which Ferrier first advocated, but the recent experiments performed by Schäfer and Brown give quite different results. They repeated the experiments which Horsley and Schäfer had performed, and found that after removal of one entire occipital lobe, the immediate establishment of bilateral homonymous hemianopsia, which persisted the whole time that the monkeys were kept alive. The dark field was always on the side opposite to the side of the brain operated upon. Before Schäfer and Brown's recent experiments, which may be found in the January number of the journal *Brain* for the present year, Munk was the only experimental physiologist who maintained that the "removal of the whole occipital lobe, and of this alone, in monkeys, produces immediate and persistent hemiopia, or total blindness, according as one or both sides are operated on."

Rosenthal, Hughlings Jackson and Bastian believe that lesions in the occipital lobes are attended by greater impairment of the mental faculties than lesions of equal size in any other portion of the brain. Notwithstanding that we have a number of well-studied cases of disease of the occipital lobes in man, some in which but few symptoms beyond hebetude were observed, and others in which

vision was also affected, there is still great need of careful, and more extended observations in cases of this kind, before we have sufficient definite localizing symptoms of disease in the occipital lobes to justify the surgeon in exploring this portion of the brain for the relief of cerebral symptoms. The writer believes that Seguin is justified in framing the following conclusion: "Lateral hemianopsia, without motor or common sensory symptoms: this symptom alone, is due, we believe from convincing evidence afforded by cases 28, 29, 41 and 45, to lesions of the cuneus only, or of it and of the gray matter immediately surrounding it on the mesial surface of the occipital lobe in the hemisphere opposite the dark half fields." ("Pepper's System of Medicine," Vol. V., p. 85.)

If a case should present lateral hemianopsia, together with impairment of the mental faculties, without motor or common sensory symptoms, we should be able to feel quite positive in locating an extensive lesion in one occipital lobe, the side of the brain lesion being opposite to the one on which the dark half-fields appear.

All that region of the brain lying between the occipital lobe and the motor or Rolandic area is known as the parieto-temporal region. Only the supramarginal lobule, angular gyrus, including the inferior parietal lobe, and the external surface of the temporo-sphenoidal lobe concern us here, as the internal surface of the latter, the occipito-temporal convolutions (lingual lobule, fusiform lobule), the uncinate gyrus, and the hippocampal region, if diseased, could not be safely reached by the surgeon. This entire cortical area is commonly known as the sensory region. In the occipito-angular region Ferrier experimentally locates the center for vision, but it is probable that the angular gyrus has very little, if anything, to do with vision proper. In regard to the location of the centers for smell and taste, Ferrier says: "Irritation of the lower extremity of the temporo-sphenoidal lobe, or region of the subiculum cornu ammonis, causes movements of the nostrils and head indicative of excitation of subjective

olfactory sensation. Destruction causes no motor paralysis, but is followed by loss of smell on the same side; and, when the lesions invade not merely the subiculum, but the neighboring regions on the same side, taste also is affected on the opposite side of the tongue. Bilateral lesions cause complete loss both of taste and smell." He admits that the localizing of these special senses by experiments on the monkey have not been confirmed by lesions in the brain of man. Ferrier also locates the center for hearing, that is, auditory discrimination, as contradistinguished from auditory reaction, in the superior temporo-sphenoidal convolution. Ferrier and Schäfer have observed movement of the eyeballs on irritating the cortex in the region of the angular gyrus. Schäfer states that the eyelids were at the same time usually raised. The most recent "Experiments on Special Sense Localization in the Cortex Cerebri" of the monkey are by Schäfer and Brown (*Brain*, Jan., 1888). They destroyed the superior temporal gyrus on each side in six monkeys. In all six the result was the same. "Hearing was not only not permanently abolished—it was not perceptibly affected. The animals, even immediately after recovery from the anæsthetic, reacted to slight sound of an unusual character, such as smacking of the lips or the rustle of a crumpled newspaper." Some of the monkeys were kept for several months after the operations, but no impairment of hearing was noticed. The whole temporal lobe on each side was excised in one case. Loss of intelligence and memory was well marked, but the senses of hearing, smell and taste were not apparently affected.

In my communication to this society one year ago, on the subject, "Cerebral Localization," with reference to the functions of the temporo-sphenoidal lobe, I stated: "Of late the tendency has been to locate a center for impressions of muscular sense in the inferior parietal lobule, and pathological observations have been in confirmation of this center.

"The cortical center for smell has never been definitely

settled, but some observers think the mesial gyri of the temporal lobe may be its seat.

"The cortical center for taste is likewise unknown, but the mesobasal portion of the temporal lobe is supposed to be its site."

Seguin says ("Pepper's System of Medicine," Vol. V., p. 82): "Lesions of the acoustic center are somewhat better known, at least as far as the function of hearing language sounds (psychic hearing) is concerned. A number of recently published cases have quite positively shown, that the existence of word-deafness indicated a destructive lesion of the dorsal gyri (more particularly the first and second) of the temporal lobe (the left always?). The lesion may also be in the inferior parietal lobule and gyrus supramarginalis, penetrating deeply enough to injure the acoustic fasciculus on its way from the internal capsule to the center." It is probable that word-deafness and sensory aphasia are produced by lesions in the temporal lobe, especially when they occur in the superior convolution, but while experimental physiologists disagree in regard to the functions of the temporo-parietal portion of the brain, and until we have more clinico-pathological observations tending to definitely localize certain sensory functions, it does not seem to me that lesions in this portion of the brain can be sufficiently localized, if diagnosed, to enable the surgeon to cut down upon the site of disease. If certain sensory symptoms were the primary symptoms in a case of brain trouble, and portions of the adjacent motor region should subsequently become involved, then we might feel justified in operating with the probability of being able to reach the original seat of the brain lesion. In seeking definite localizing symptoms of brain lesions, it is with a sense of relief that we turn from the study of symptoms of disease in other portions of the brain to those induced by irritative and destructive lesions in the great Rolandic region or motor area. This consists of the bases of the three frontal convolutions, the precentral and postcentral convolutions, the parietal lobule,

and part of the marginal convolution on the mesial surface of the hemisphere, known as the paracentral lobule. Nearly all observers are agreed that the upper ends of the precentral and postcentral gyri and the mesial surface of the same (paracentral lobule) constitute the center for the movements of the opposite foot and leg. The center for the movements of the arm and hand of the opposite

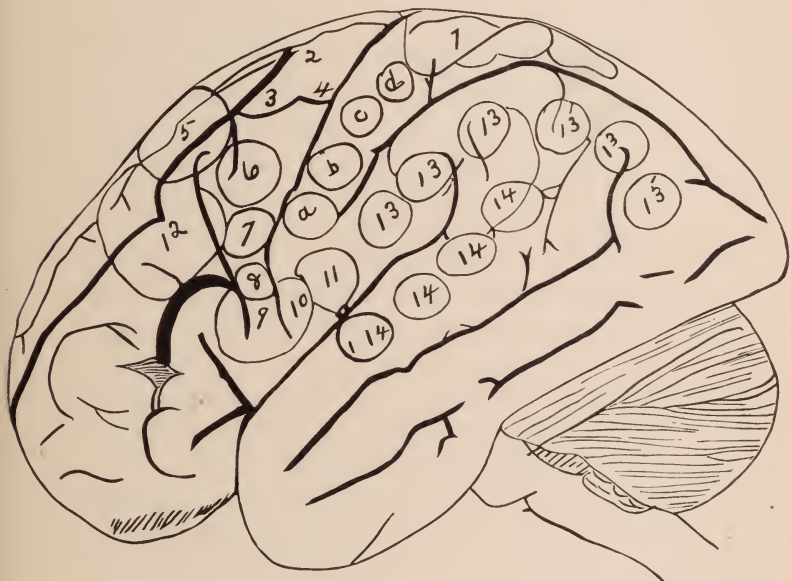


FIG. 1. *Left lateral view of the human brain (after Ferrier).* "1. Placed on the postero-parietal lobule, indicates the position of the centers for movements of the opposite leg and foot, such as are concerned in locomotion. 2, 3, 4, placed together on the convolutions bounding the upper extremity of the fissure of Rolando, include centers for various complex movements of the arms and legs, such as are concerned in climbing, swimming, etc. 6, is the center for the movements of the hand and forearm in which the biceps is particularly engaged, viz., supination of the hand and flexion of the forearm. 5, is concerned in putting forward the hand. 7 and 8, centers for the elevators and depressors of the angle of the mouth respectively. 9 and 10, included together in one, mark the centers for the movements of the tongue, as in articulation. 11, the center of the platysma, retraction of the angle of the mouth. 12, a center for the lateral movements of the head and eyes with elevation of the eyelids and dilatation of the pupil. A, b, c, d, indicate the centers of movements of the hand and wrist."

side is located in the upper middle portions of the pre- and postcentral gyri. The center for the movements of the facial muscles of the opposite side is situated in the base of the second frontal gyrus and the lower third of the prefrontal gyrus. The cortical center for the movements of the muscles of the tongue and lips (speech center) is in the base of the third left frontal gyrus. Each of the above centers extends over a considerable cortical surface, and were we not able to distinguish smaller and more limited centers, I fear that there would be too much uncertainty as to the exact seat of a cortical lesion to enable the surgeon to reach it without making more than one opening through the skull. Thanks to the indefatigable labors of Ferrier, we have numerous small cortical centers mapped out, each exciting into action groups of muscles. I by no means believe that the little centers pointed out by Ferrier are so clearly defined and limited as has been claimed by some; but while each of the little cortical motor centers appears to run into or be connected with adjacent ones, the centers given by Ferrier as exciting groups of muscles, are probably the most excitable for those particular groups. Since we have clinically various forms of monoplegias and monospasms, resulting from limited lesions in the cortex, it will be necessary to refer to the different cortical centers in the Rolandic region.

Centers for the movements of the leg and trunk muscles are found, according to Schäfer and Horsley and others, on the inner surface of each cerebral hemisphere (paracentral lobule). These are not shown in the foregoing diagram.

In studying lesions of the motor or excitable area, of the cortex, it is well to be familiar with the blood supply to this portion of the brain. The paracentral lobule on the inner surface of each hemisphere receives its blood supply through branches of the frontal artery, while the motor region on the convex surface is supplied by branches from the middle cerebral artery. The latter vessel is more

frequently the subject of disease than the anterior frontal. In cases of occlusion of the middle cerebral artery, beyond the first part of its course, after the small branches going to the internal capsule and corpus striatum, have been given off, the whole of the excitable area on the convex surface of the brain suffers, but the paracentral lobule is unaffected, thus accounting probably for the preserved motility of the trunk muscles on the opposite side of the body. There are from the middle cerebral artery three principal branches which are distributed to motor areas on the convex surface of the brain; the first, or inferior frontal, goes to the base of the third frontal convolution (artery of Broca's convolution); the second, or ascending frontal, is distributed to the pre-frontal convolution; the third, or ascending parietal, supplies the post-central convolution. Occlusion of a separate branch, one of the above Sylvian arteries gives rise to symptoms of monoplegia, which differs according to the branch involved.

We may have destructive or irritative lesions affecting the entire Rolandic region or a part of it. It is rare for the paracentral lobule to be involved when the entire motor area on the convex surface of the brain is affected. When the lesion is limited to the territory of the Sylvian artery, there results a case of ordinary hemiplegia without loss of sensation. Muscles connected in bilateral and associated movements usually escape. There is likely to be some muscular rigidity or convulsive movements in the paralyzed parts, especially at the beginning of the trouble. It is not in organic brain disease, extending over a large area, like the great Rolandic region, that surgical interference is likely to be demanded, but in small cortical lesions, giving rise to one or more of the forms of monoplegia or monospasm. To these I wish now to direct your attention.

UNILATERAL OCULO-MOTOR MONOPLEGIA. Lesions giving rise to this have been located, experimentally, by Ferrier, in the base of the second frontal convolution, and clinico-patho-

logically, by Grasset, in the cortex surrounding the posterior extremity of the horizontal branch of the fissure of Sylvius. When the lesion is irritative the head and eyes turn from the side of the affected hemisphere and look toward that on which the muscles are spastically contracted. When the lesion is paralytic, the eyes and head turn toward the side of the affected hemisphere and from the side on which the muscles are paralyzed. But since there seems to be so much uncertainty as to the exact location of a lesion producing this form of monoplegia, it does not seem to me to have sufficient localizing value to justify trephining for the relief of brain symptoms. It is just possible that both Grasset and Ferrier are right. It must not be forgotten that lesions in the pons will give rise to conjugate deviation of the eyes and turning of the head, but under such circumstances there should be other symptoms to distinguish it from a cortical lesion.

In studying the various forms of monoplegia, it is of the first importance to determine, if possible, what movements of a member are affected in cases of partial spasm or paralysis.

CRURAL MONOPLÉGIA. Monospasm or monoplegia involving the leg center alone is comparatively rare. Ferrier experimentally located the center for movements of the leg of the opposite side around the upper portion of the fissure of Rolando, involving the pre- and post-central gyri. Horsley and Schäfer found this center for the leg movements extends also into the paracentral lobule, which is, besides, the center for the movements of the trunk muscles on the opposite side. Ferrier wisely says: "It is a question by no means easy to answer, *a priori*, how far the movements of the human leg can be compared with those of the leg-arm and foot-hand of the monkey; or what is the representative in man of the center for the tail, which in the New World monkeys plays the part of a hand." We have a number of well-observed cases of crural monoplegia, occurring in man, in which lesion has been found in the leg center mapped out by

Ferrier. When the leg is primarily affected, the arm is often subsequently involved, a result which we should expect, as the arm center is in close relation with that of the leg.

"Hitzig quotes from Löffler the case of a Danish corporal who was struck by a shot at the superior and posterior extremity of the left parietal bone, close to the sagittal suture. The right leg was immediately paralyzed. The right arm became affected on the seventh day. On trephining recovery took place—the arm first and then the leg."

"Gongenheim has recorded a case of a man aged 45, who was seized with paralysis of the left leg, without affection of sensation. A few days after, the paralysis increased, and the left arm became similarly affected. Diagnosis was made of a lesion of the upper extremity of the ascending frontal" (convolution). "The necropsy revealed a lesion, tuberculo-meningeal of the ascending frontal, but especially involving the paracentral lobule." (Bastian.)

In the journal *Brain* for April, 1880, Ferrier reported a case, beginning as one of crural monoplegia, but subsequently becoming one of brachio-crural monoplegia. There was first paresis of the left leg, which deepened into complete paralysis on the second day; then the arm became paretic and finally flaccid as the leg. There was no paralysis of the face or tongue, and sensation was unaffected. About a week after the onset of the paralysis of the arm, the patient had a series of convulsive movements of the arm and leg, commencing in the leg and lasting half an hour. The necropsy showed a tubercular deposit limited to the cortex of the leg center on the internal aspect of the hemisphere, and on the convex surface of the brain, involving in the latter position the upper portions of the pre-central and post-central gyri. Haddon and Bourneville have reported cases of crural-monoplegia, in which after death, lesions were found in the cortical leg center as given by Ferrier, and later, enlarged by

the experiments of Horsley and Schäfer. Bastian gives a short abstract of two cases of crural monospasm which have been placed on record by Hughlings Jackson. "In the first case, fits began almost invariably in the right leg, and were frequently 'limited to it.'" Subsequently adjacent motor areas became affected. The necropsy revealed a tumor two inches in diameter in the upper posterior part of the frontal lobe, extending posteriorly to the fissure of Rolando. "In the second case, there were convulsions, beginning in the left great toe, and often confined exclusively to the leg, and followed ultimately by paresis of the left foot. After death a syphilitic lesion was found at the upper part of the ascending parietal convolution, extending over part of the upper end of the ascending frontal and over adjacent parts of the parietal of the right hemisphere." (Bastian, "Paralysis," etc.) Case V., of "Notes of Twelve Cases of Brain Tumor," reported by Dr. C. K. Mills, might be classed as one of crural monoplegia. "In this there was severe left-sided spasm, beginning with twitchings in left toes and foot." The tumor involved the upper fourth of the ascending parietal and a similar segment of the ascending frontal convolutions, crossing the fissure of Rolando at its upper extremity. (*Arch. Med., New York*, Vol. VIII., No. 1, 1882).

BRACHIO-CRURAL MONOPLEGIA. Were brachial and crural monoplegias well defined, the division brachio-crural or brachio-facial monoplegia would be unnecessary. Experimentally, we have a well-defined monospasm or monoplegia, but clinically, as has been seen from the cases cited as examples of crural monoplegia, in the beginning, the leg, arm or facial center alone may be involved, but subsequent affection of one or more of the adjacent motor centers usually takes place. A lesion in the leg center next encroaches upon the arm center, and finally upon those of the face and speech. If the trouble begins in the center for movements of the muscles of the face,

the arm center is usually affected before that of the leg, a single cortical lesion could hardly affect the leg and face centers without involving that of the arm. The initial spasm or paralysis indicates, in a case of monospasm or monoplegia, the center primarily affected. Case VI., in a paper read by Dr. C. K. Mills, and before referred to, is an example of brachio-crural monoplegia, the lesion finally extending to the face center and posterior portion of the internal capsule. "Spasm confined to the left arm, partial spasm of left arm and leg, and late in his illness, of left side of his face. Left hemianæsthesia, at first partial, but later complete and persistent. Sight impaired; right pupil dilated, and left contracted before death." The tubercular tumor in this case "involved the posterior extremities of the first and second frontal, and upper thirds of both ascending convolutions, of the right hemisphere. Interior of brain hemisphere broken down into a cavity containing brain detritus and some pus; the parts destroyed included white matter of parietal lobe, the posterior third of the lenticular nucleus and adjacent posterior portion of the internal capsule.

BRACHIAL MONOPLÉGIA. Ferrier says that "The centers for the movements of the arm and hand occupy a considerable space, as might be expected from their importance as organs of intelligence. Area (5) is the center for the forward extension of the arm and hand; area (4) for the adduction and retraction; area (6) for the supination and flexion; while the various letters (a, b, c, d) placed in the ascending parietal convolution indicate the position of centers for the movements of the wrist and fingers. With these latter retraction of the angle of the mouth is apt to be associated, owing to the proximity of the facial and oval centers (7, 8, 9, 10, 11)." The cortical centers, associated with the movements of the arm and hand, are more definitely settled, both experimentally and clinico-pathologically, than those for the leg movements. In cortical lesions, affecting the muscles of the hand and

arm, it is common for some of the facial muscles to be involved.

Ferrier mentions M. Maurice Raymond's case, reported in 1876, of paralysis limited to the left arm, and more particularly to the extensor muscles, though the flexors were also paretic. The lesion was situated in the ascending parietal convolution of the right hemisphere, in the position of a line drawn backward from the base of the second frontal. The whole could be covered with the pulp of the finger. He also cites a case from M. Sabourin, one each from M. Boyer, Atkins, M. Pierret, Darolles and M. Vermeil, all with paralysis limited to the arm and hand from lesions in the cortical center for the movements of the arm and hand muscles. In this connection, the case of brachial monoplegia, which I saw in consultation with Drs. Kimball and Strickler, of Colorado Springs, is worthy of brief record. The man was nearly thirty years old and had recently convalesced from an attack of typhoid fever, which had left him with a purulent discharge from the middle ear. The evening before I saw him he was first observed to be delirious, although he had not been as well as usual for several days. I found him lying quietly in bed and intently watching the movements of everyone who entered the room. His eyes followed us in all our movements in going from one side of the room to the other, as one intently interested in his surroundings or suspicious of the actions of others. He said nothing unless some one approached his bed or spoke to him, when a shower of profane abuse followed. He recognized his attending physician and seemed to appreciate his attentions, but was disturbed by the presence of anyone else. The left corner of the mouth was paretic and the tongue deviated slightly to the left side. The eye muscles appeared normal. The extensor muscles of the left wrist and hand were flaccid and the flexors paretic. The other muscles of the left arm and the leg muscles were unaffected. There was an abscess in the cellular tissue of the right forearm, but no impairment of muscular movements on the right side.

I diagnosed an abscess in the upper portion of the lower third of the post-central convolution (ascending parietal), and advised trephining. The operation for some reason was not performed till two days afterwards. Just before the operation the wrist muscles appeared about the same as when I first saw him; but the left corner of the mouth showed less weakness and the tongue deviated but little, if at all, from the median line. Dr. Strickler trephined over the lower third of the ascending parietal convolution, and evacuated about one ounce of pus and detritus of the broken down brain substance. After the effects of the anæsthetic had passed off the flexor muscles of the left wrist were stronger than before the operation, but the extensors were completely paralyzed, the tongue was protruded in the median line, the left corner of the mouth showed no perceptible difference from its fellow, the irritability of temper was greatly diminished. He showed no aversion to strangers and would talk about his condition, answering questions intelligibly. He said that he felt much better than before the operation. He did well for several days after the pus was evacuated, but on the fifth day evidence of encephalitis developed, and death followed on the ninth day. At the necropsy an empty abscess cavity about one inch in diameter was found in the upper portion of the lower third of the ascending parietal convolution.

At a meeting of the Medical Society, of London, March 5, 1888, Dr. Ferrier and Mr. Victor Horsley read the notes of a case of cerebral abscess, associated with a discharge from the ear, in which Dr. Ferrier diagnosed the presence of an abscess in the brain, and Mr. Horsley operated successfully for its evacuation. The patient was a man forty-seven years old, who had been ill since November 10th, 1887, and on the fifteenth had had an offensive discharge from the left ear. On December 8th, when Dr. Ferrier first saw him, he was drowsy and complained of pain on the left side of the head. He had no paralysis. His pulse was 52, weak and intermittent. His

respirations were fourteen to the minute, labored and sighing. His temperature was normal. After a temporary improvement, he was at the end of six days more drowsy, and in a few days more he developed delirium and confusion in his speech. There was also some weakness of the right angle of the mouth.

On studying these symptoms, Dr. Ferrier came to the conclusion that the man had an abscess of the brain, probably situated in the anterior part of the third left temporo-sphenoidal lobe, and abutting or pressing upon the fissure of Sylvius. Mr. Horsley agreed in this diagnosis, and, on December 9th, he operated by trephining the skull, opening the dura mater, and puncturing the brain with a trochar. The result was the evacuation of about five fluid drachms of odorless pus. After this the patient went on uninterruptedly to recovery.

In commenting on this case Dr. Hughlings Jackson describes the result as simply magnificent, and others of the Society joined in his admiration of the acumen and skill displayed by Dr. Ferrier and Mr. Horsley. (*Medical and Surgical Reporter*—ALIENIST AND NEUROLOGIST, April, 1888.)

FACIAL MONOPLÉGIA may occur from cortical lesions, unassociated with paralysis of the muscles of the hand or arm. When the lesion is on the left side aphasia is generally present, the diagnosis of facial paralysis, due to a cortical lesion, from the ordinary form of peripheral facial paralysis is generally quite easy.

APHASIA. It is impossible, for me, in the time at my disposal to go into an extensive review of this very intricate subject. Because a condition of aphasia is present it by no means follows that there is necessarily a lesion in the base of the third left frontal convolution. Oro-lingual hemiparesis is caused by a lesion in the base of the third frontal convolution, and in the vast majority of cases the lesion is on the left side. There is developed

a condition which renders the patient unable to express thoughts in articulate speech, or to think in words; it is not a speechlessness from paralysis of the muscles concerned in articulation. The more the condition of aphasia has been studied, the larger the area, the destruction of any part of which gives rise to a certain variety of aphasia, has become. We may have word deafness with hemianaesthesia, when the lesion would be near or in the posterior portion of the internal capsule. Under such circumstances the word deafness is owing, as believed by some, to cutting across of certain commissural fibers. When aphasia is associated with facial monoplegia, the lesion could be pretty certainly located in Broca's speech center (base of third frontal convolution, left generally). Sometimes aphasia is associated with considerable mental defect, when the lesion is probably posterior to Broca's speech center, and in the neighborhood of the posterior extremity of the horizontal branch of the fissure of Sylvius. Bastian, who has devoted considerable time to the study of aphasia, says: "We must now be prepared to admit the existence of many closely allied forms of aphasia and a comparatively wide area in which lesions may give rise to this or that variety." After referring to his previous observations, he continues: "Subsequent experience tends to confirm the hypothesis which I then advanced, to the effect that the tendency to mental impairment, will, other things equal, increase as lesions of the left hemisphere, capable of producing this condition, recede in site from the third frontal convolution, and approach the posterior extremity of the Sylvian fissure." ("Paralysis, Central, Bulbar and Spinal").

LESIONS IN CENTRUM OVALE. Any portion of the medullary white substance, between the cortex above and the great ganglia below, may be the seat of disease, and especially are small hemorrhages liable to occur here. This portion of the brain receives its vascular supply from two systems of vessels, one set coming from the basilar

and one from the cortical arteries. There is no direct anastomatic communication between these two sets of vessels. The long nutrient arteries given off by the cortical vessels penetrate the brain substance to a depth of one to nearly two inches.

In speaking of lesions of the centrum ovale, Ferrier says: "Lesions here have the same effect as lesions of the corresponding cortical region, according as they are destructive or irritative, or according as they are limited or general." Bastian observes that "paralysis produced by lesions in the centrum ovale in the region of the motor area are attended by no specific characters by which they can be separated during life from the results of cortical lesions on the one hand, or of small lesions in the internal capsule on the other." He also, cites a case reported by Anton Frey. In this there existed brachio-facial monoplegia. At the autopsy an empty cavity, a result of hemorrhage, was found in the medullary substance beneath the cortical motor area for the leg and arm. Ferrier (p. 52), in discussing the diagnosis of cortical lesions, states: "Apart from considerations as to the diathetic indications, mode of onset, etc., of the affection, there are no features which clearly enable us to distinguish between hemiplegia depending on general destruction of the motor area of the cortex, and hemiplegia due to destructive lesions of the corpus striatum, more particularly those involving the anterior two-thirds of the internal capsule." It is difficult to take exceptions to Ferrier's remarks in relation to extensive lesions in the motor cortical area, but monoplegias, due to cortical lesions, are less likely to be mistaken for disease of the internal capsule. Lesions (deep) in the centrum ovale may be mistaken for lesions in the cortex, but they are the hemorrhagic lesions that are the most likely to be thus confounded, although, even here, if the case has been seen early, a diagnosis is possible. A study of the relative temperature and the vasomotor disturbance of the two sides of the body may aid in distinguishing a cortical

lesion from one in or near the great ganglia, but as a rule the results from these sources are too uncertain to be of much value. Cases of hemorrhage, more or less extensive, are the most confusing, but it is in these that operative interference is rarely, if at all, called for. In cases of cortical hemorrhages which involve a large portion of the motor area there will be probably convulsions, and if the hemorrhage takes place slowly one motor region after another will be implicated. Unconsciousness is less common in cortical hemorrhages than in hemorrhages in the neighborhood of the great ganglia. In abscesses and tumors of the cortex the frequency of convulsions, and localized pain, especially on percussing the head, and if the motor area is involved, monospasm or monoplegia, the affection gradually attacking one center after another, are the most important points in the diagnosis.

Subcortical lesions, or lesions in the centrum ovale just beneath the gray matter of the cortex, especially in the great Rolandic region, give rise to symptoms almost identical with those of a purely cortical nature, and are alike available to surgical interference.

SELECTIONS.

NEUROPHYSIOLOGY.

ON THE NECESSITY FOR A MODIFICATION OF CERTAIN PHYSIOLOGICAL DOCTRINES REGARDING THE INTER-RELATIONS OF NERVE AND MUSCLE.—*By Thomas W. Poole, M. D.*

The Stimulation (?) of Asphaxia.—Is it not a strange proposition to put forward in the name of medical science, that an animal dying of asphyxia is actually undergoing a high degree of nervous excitation. Yet such is actually the teaching of the text-books in physiology to-day! Dr. Burdon Sanderson treating of asphyxia says: "One of the effects diminishing the proportion of oxygen in the blood is to excite the vasomotor center, and thus to determine general contraction of the small arteries. The immediate consequences of this contraction is to fill the venous system." As the process advances "the heart's contractions become more and more ineffectual till they finally cease, leaving the arteries empty and the veins distended." (Hand-book, etc., p. 333.)

There is no mention here of arterial relaxation or dilation, to facilitate the outflow of blood. On the contrary "the immediate consequences" of "a general contraction of the small arteries" is "to fill the venous system," and in a few minutes "the arteries are empty and the veins dilated," the animal being dead. This is precisely the condition which we have seen in a former stage to be the direct result of destruction of the nervous centers. It is a process which invariably prevails in the dying and is complete in death. Thus according to Paul Bert, quoted by Prof. Kuss, "death is always owing to asphyxia." (Phys., p. 330.)

Why has it been assumed by physiologists that in this rapid sinking into death the nervous centers are undergoing an unusual excitation? Because as we have just seen, there is "a general contraction of the small arteries," and other spasms and contractions of the respiratory muscles fixing the chest and arresting respiration; and in accordance with the theory of the day, these spasms and contractions of the muscles depend on active discharges of nerve force, stimulating the muscles to contract. How is this assumed extraordinary activity of the nerve centers to

be accounted for in an animal actually dying? There is a "physiological law" which declares that the activity of an organ is directly dependent upon its receiving a due supply of arterialized blood (Dr. C. B. Radcliffe); and Dr. W. B. Carpenter has said of venous blood, that "it exerts a depressing influence upon the nervous centers," from which they are at length "completely paralyzed." (Hum. Phys., p. 537).

One would have imagined that bad blood, deficient in oxygen and loaded with carbonic acid, would have been the very last thing which a physiologist would have chosen, as a pabulum from which to generate an excess nerve force! and doubtless the choice was embarrassing enough. But necessity compels. The exigency of the theory is inexorable. Muscular contraction without nervous stimulation is deemed impossible, and there being nothing else to fall back upon, it has been assumed that impure, non-arterialized blood plays the part of a stimulant to the nervous centers.

Accordingly we find a recent and popular writer—Dr. J. Milner Fothergill—in his "Antagonism of Therapeutic Agents," declaring that "the more venous the blood the greater the activity of the respiratory center. The effect of venous blood is to augment the natural explosive decomposition of the nerve cells. . . . The effect of defective of arterialization causes more rapid as well as deeper breathing; more perfect and extensive respiration is set up until properly oxygenated blood is procured." This author would almost lead one to believe that a kindness was done to the rabbit in having its vagi cut. He says: "When the vagi are cut, the respiration is modified; it becomes deeper and more prolonged, fuller and more complete." (P. 88.)

But unfortunately this view of an apparently improved respiration is wholly delusive; for, as Dr. Burdon Sanderson tells us, "notwithstanding the vigor of the respiratory movements, the blood becomes more or less venous,"—the animal is dying, and does die, "commonly before the end of the first day." (Hand-book, p. 317.)

Let it be kept in view that the theory of the day explicitly teaches that "the muscles receive from the nervous system a preternatural stimulus to action" (Dr. Pereira, Vol. II. p. 541,) and that spasm and convulsion "are dependent upon excessive activity of the spinal centers:" (Dr. W. B. Carpenter, *Ib.*, p. 846,) and we shall

see presently to what apparent absurdity this doctrine has led. In one of Kussmaul and Tenner's experiments, the carotid arteries are ligatured with the effect of inducing "immediate loss of consciousness and general and violent convulsions," which are promptly recovered from, and nervous control over the muscles restored, as soon as the ligatures are untied and blood is admitted to the brain. Dr. M. Foster's view of this experiment is, that here "the nervous centers being no longer furnished with fresh blood, become rapidly asphyxiated through lack of oxygen." And yet strangely enough he holds that in this almost fatal condition of "rapid asphyxiation" the nervous centers are undergoing stimulation! for he adds: "similar anæmic convulsions are seen after sudden and large loss of blood from the body at large; the medulla being stimulated by the lack of arterial blood." (Phys., p. 441.) Surely such a view as this may be gravely challenged, even when put forward on high physiological authority! Dr. M. Foster remarks in another page, in his chapter on "Death," that "blood is not only useless but injurious unless it be duly oxygenated." (P. 833.) And again he says of venous blood, that if it "continues to be driven through a muscle the irritability of the muscle is lost even more rapidly than in the entire absence of blood. It would seem that venous blood is more injurious than none at all." (P. 126.) Why should nerve function be augmented by what is useless and injurious, not only to muscle, but to every other tissue in the body?"

The Cheyne-Stokes Respiration.—What seems a lower depth of absurdity, if possible, has yet to be reached in the explanations of the Cheyne-Stokes respiration. I quote here from Dr. L. Sansom's "Physical Diagnosis of the Heart," by whom Traube's theory on this subject is said to be "the most plausible." According to Traube, "the first thing which occurs is the establishment of a condition of impaired irritability of the respiratory center through mal-oxygenation; the long respiratory arrest gives time for the accumulation of carbonic acid in excess in the blood. Arrived at a certain maximum this begins to stimulate, slowly and imperfectly at first, and afterwards in increasing degrees, the center, so that it developes the respiratory efforts till they culminate in dyspnœa. Then as the center ceases to be stimulated or becomes exhausted, dyspnœa again supervenes." (P. 37.)

It will be observed that here the *deficiency* of oxygen

and subsequently the *presence* of carbonic acid are made to play opposite and antagonistic parts! The lack of oxygen (instead of stimulating the medulla, as supposed by Dr. M. Foster), first enfeebles the respiratory center, in the medulla, and then, the same blood, still deficient in oxygen, but now loaded with carbonic acid, counteracts the previous depression, and tones up the weak nerve center, so that, ere long, it displays extraordinary activity. But, unfortunately, this exhilarating pabulum—carbonic acid—is soon exhausted, and the nerve center resumes its former feebleness till a new supply can be procured. The physiologist is certainly quite impartial, and allows the rivals to have their “innings” turn about. How such nonsense as this “most plausible theory” could find a place in physiological literature seems explicable only on the exigency of the hypothesis so long in vogue.

Filehne's theory in explanation of this state is more complicated, and at least equally absurd. Instead of the respiratory center being stimulated (as Traube says), it is the vasomotor center which is excited by the presence of carbonic acid. Arterial contraction follows till “a gradually increasing anæmia of the respiratory center” is brought about. This anæmic condition excites the respiratory center “and inspiration becomes more and more deep,” till oxygen is supplied to the blood; “the arterial spasm is thus relieved,” owing to the freshly oxygenated blood failing to stimulate the vasomotor center (so as to contract the arteries), as the carbonic acid had previously done. With the relief of arterial spasm, and a consequent normal dilation of the arteries, “the anæmia of the respiratory center passes off, and with it the exaggerated impulse to respiration, and breathing once more becomes superficial.” (P. 137.) In other words, the respiratory center functionates best when it is supplied not only with non-arterialized blood, but when it has too little even of that; as soon as the anæmia passes off, and this nervous center gets a fair supply of blood, it ceases to act—suspends business—till the better times of bad blood and deficient blood come round again, when it is moved to activity once more!

There is still another explanatory theory to be noticed, which I find referred to editorially in the *Canada Lancet* for February, 1886: “Bramwell, who follows the teaching of M. Foster and others, supposes that the respiratory center consists of two portions, one accelerating (or

motor), and one inhibitory. He further believes that these two portions are acted on in opposite directions by the blood, whether arterial or venous. Thus while venous blood stimulates the discharging cells of the center and depresses the inhibitory portion, arterial blood acts in exactly the opposite direction."

"At the close of the period of apnœa, the discharging portion of the center is stimulated by the venous blood," with its excess of carbonic acid, and this same blood, at the same time, is depressing the rival, or inhibitory part of the center. The motor or discharging portion of the center triumphs; respiration becomes established and even exaggerated. Unhappily the victor fails to "hold the fort." As soon as the blood becomes "fully oxygenated," the "inhibitory portion becomes stimulated, and gradually overpowers the discharging portion," so that "the respirations grow weaker and weaker until the state of apnœa results." Then the suspension of breathing restores the venous character of the blood and accumulates a store of carbonic acid, the stimulation of which reanimates the center previously depressed by the presence of oxygen in the blood. Such appears to be the scope of this theory.

In this, as in the previous explanations, arterial blood is made to play the part of a depressor and paralyzer of the respiratory process, which it is constantly tending to arrest; but while paralyzing one portion of the respiratory center it is stimulating another; and a similar double character is attributed to the action of venous blood. Thus during the brief time from the beginning of apnœa to the culmination of dyspnœa—a period rarely exceeding one minute—the blood passing to the brain is called upon to exert four different and even diverse effects; first as venous blood stimulating one part of the respiratory center and paralyzing another portion of the same center; reverse effects being produced a few seconds later by the same blood on its becoming oxygenated.

One is really at a loss to understand how such an explanation could have been admitted to a place in physiological literature. Again it is the exigencies of an erroneous theory which have led to such a complicated and unsatisfactory hypothesis.

If it be asked how the state of apnœa is induced by forced vigorous respirations, if it be not due to an excess of oxygen introduced into the blood, and how the opposite condition, or demand for air by breathing, seems to

attend the absence of oxygen and the presence of venous blood, I can only answer as to the last that if no better explanation than that venous blood is a stimulant has yet been found, some better explanation is surely to be looked for. And as to the state of apnœa referred to, I find Dr. Austin Flint stating that "according to Hoppe-Seyler, apnœa, in the limited sense above mentioned, is to be attributed, not to an excess of oxygen in the blood, but to fatigue of the respiratory muscles." (Prac. of Med., 5th Ed., p. 70.)

A new theory suggested.—Dr. Sansom regards the condition of the respiratory center in this case as one of paresis and direct exhaustion. He shows that during the apnœal period "the arteries are strongly contracted." The proof of this is found in the rise of arterial tension; in the depression of the "great fontanelle" of the head, and also in the arrest of the process by the inhalation of nitrite of amyl, which dilates the arteries. On the theory of these pages, arterial contraction is due to vasomotor nerve depression or paralysis; and accordingly we find here that the vasomotor center, as well as the respiratory center, is depressed in function. It has been amply shown above, that contraction of the arteries occurs in the dying and is complete in death. It is also one of the prominent phenomena during the last stages of asphyxia and is invariably attended by venous fullness. The condition present during the stage of apnœa in the Cheyne-Stokes respiration, with its contracted arteries and dilated veins, appears to correspond very closely to that present as death approaches and in the latter stages of asphyxia. The original paretic and exhausted condition of the respiratory and vasomotor centers is aggravated by the further depression caused by mal-oxygenation of the blood; which, when venous and loaded with carbonic acid, is invariably a depressing, and never a stimulating agent to nerve function. Vasomotor nerve failure induces contraction of the arterioles, systemic emptiness and venous engorgement, as the foregoing examples abundantly prove; and as a consequence, the great mass of the blood "becomes lodged and hidden as it were" in the great venous trunks. At that moment death is very near, but as the heart continues to beat, it is fair to assume that a small quantity of blood still finds its way through the lungs, and, from its very scantiness, is capable of being ærated by means of the exchanges of gases still going on

in the lungs, owing to the presence of residual air, during the temporary, partial or complete arrest of respiration. As a consequence, the quantity of blood reaching the nerve centers, though small, is at least partially oxygenated, and serves to revive the function of these centers "imperfectly at first," but with momentary improvement.

The effect of this revival on the vasomotor center is to facilitate the dilatation of the arterioles; in which the pulmonary vessels share, permitting, ere long, the inrush of venous blood from the distended vena cava and portal system, and its transmission onwards through the heart and lungs.

This corresponds to the period of increase in respiratory function, in which the laborious efforts of a feeble mechanism have been mistaken for an "exaggerated impulse" from excited and overacting or "exploding" nerve centers.

Meanwhile, impure blood from the venous reservoirs (finding an entrance through the now fairly dilated pulmonary vessels) begins to fill the lungs in such a quantity (as it is drawn onwards by an inequality of pressure, towards the as yet unfilled arteries) that the whole mass of blood, failing to be arterialized with sufficient rapidity, again becomes unfit for the maintenance of nerve-function and the perpetuation of processes depending upon it.

In such a case, a previously weak organ or center is the first to suffer. The medulla oblongata is such an organ in this case, and its contiguous centers for respiration and circulation fail together; bad blood and deficient blood, acting on centers previously paretic, or enfeebled, have done their work, and again the respiration is suspended. The vasomotor center is again so functionally weakened that it loses control of the arterial muscle—the "inherent contractile force," which all physiologists assign to muscular tissue, thus freed (as in the examples enumerated above), induces "the strong arterial contraction" referred to by Dr. Sansom, which contraction of the artery is all the stronger the nearer nerve force is to cease in the extinction of life.

This arterial, or systemic contraction, again empties the lungs and refills the venous reservoirs, from which the blood is again drawn, at first slowly and then again more rapidly, as the process repeats itself.

Here, then, is an explanation of the Cheyne-Stokes respiration based upon sound, though as yet unacknowledged

edged, physiological principles, according to which paretic and enfeebled nerve centers are helped by their appropriate pabulum—oxygenated blood—and are overwhelmed and have their function suspended by what is naturally calculated to poison and paralyze them, impure, venous blood, deficient in oxygen and loaded with carbonic acid.

HYDROPHOBIC INOCULATIONS.—VIGIRAL'S CONCLUSIONS.—In a report made by Dr. Wm. Vigiral on the basis of Pasteur's method of inoculation and their effects, the author draws the following conclusions:

1. Not only the saliva and the salivary glands of animals seized with rabies are virulent, or, in other words, capable of transmitting rabies, but also the peripheral and central nervous systems.

2. This virulence is maintained during several days by observing a temperature varying from 0° to 12° Cent., and avoiding decomposition.

3. There is more certainty of inoculation for rabies with nervous substance than with saliva or with the substance of the salivary glands, because rabid virus can be obtained from the nervous system, free from foreign micro-organisms.

4. Inoculating the cerebral surface after trephining, also inoculating by venous injection, is attended by more certain results than introducing the virus into the subcutaneous areolar tissue.

5. The form of rabies developed by inoculating the cerebral surface is generally that of furious madness. Furious madness, paralytic madness, or dumb madness, can be produced by venous injections of smaller or larger quantities of virus.

6. An animal is not rendered exempt from hydrophobia after inoculation with too small a quantity of virus to produce the disease; inoculation with a larger dose will produce the malady. Rabid virus obtained by successive inoculations through a series of generations in the same animal species is attended with great certainty in the regularity and nature of its effects, always providing that the concomitant conditions are identical; the incubation period becomes considerably shortened, and the virus reaches its maximum of virulence.

NEUROTHERAPY.

POLITZER'S RULES FOR TREPHINING THE MASTOID BONE.—

"1. Purulent inflammation of the mastoid process, appearing in the course of acute suppuration of the middle ear, where the persistent severe pain in the bone is relieved neither by the application for several days of cold by means of the ice-bag, nor by Leiter's cooling apparatus, nor by Wilde's incision.

[Leiter's cooling apparatus is a metallic tube, arranged to convey a current of water at any temperature, and for any desired time, around the mastoid process. Wilde's incision is a cut down to the bone and through its covering to relieve outside tension and to permit matter to escape without burrowing in every direction between the bone and muscles.]

"2. Painful inflammations of the mastoid process, occurring in acute and chronic suppurations of the middle ear, frequently preceded by great infiltration and redness of the external integuments, when these are caused by stagnation of pus in consequence of contractions of the external meatus (opening) or of numerous growths filling up the the tympanic cavity and causing the perforation. (Tympanic cavity is that of the middle ear.) The operation is necessary when several attempts to remove the obstacle to the escape of pus have failed, and especially so in all cases of suppuration of the middle ear when the discharge suddenly ceases while the inflammatory symptoms in the mastoid continue. The indications exist in such cases even if the soft parts over the mastoid process are not swollen or infiltrated.

"3. Persistent pain in the mastoid process, when at the same time the superior wall of the meatus (opening from the outside toward the middle ear) is bulged out by the inflammation having been carried to it from the mastoid cells, and when after incision of the suppurating wall of the meatus, the mastoid abscess is either not emptied at all or only insufficiently, and when the symptoms indicating retention of pus in the mastoid process remain unabated.

"4. Obstinate pain in the mastoid continuing for days or weeks without appreciable stagnation of the pus and external swelling, especially if the bone is very sensitive to pressure, as then there is probably a deep-seated abscess within the mastoid which does not communicate with the tympanum.

"5. As a vital indication in every suppuration of the middle ear combined with inflammation of the mastoid, in which fever, vertigo and headache are developed during the course of the affection, symptoms which may foretell the approach of a dangerous complication. In such cases the indication is vital."

When performed in time, by competent operators, this operation of opening the mastoid cells has been quite successful. Thus of Schwartze's 100 cases, seventy-four were cured, six not cured and twenty died. The deaths were mostly from meningitis or from abscess of the brain. In only one, it seems, was the operation the cause of the fatal result. In this a splinter of bone perforated the outer membrane and set up a meningitis.

There are two methods of opening the mastoid cells in use: One by boring with drills, the other by chiseling.

SULFONAL—A NEW HYPNOTIC.—Sulfonal is the euphonic contraction from the chemical name of the article: Diaethylsulphondimethylmethan. It occurs in crystalline form, totally void of either odor or taste, soluble in 18 or 20 parts of boiling water and something over 100 parts of water, at a normal temperature, and readily soluble in a mixture of alcohol and ether. It is not acted upon by either acids, alkalies or oxidizing agents.

Profs. Baumann and Kast, of Freiburg, have already made a series of careful clinical experiments with Sulfonal to determine its exact physiological action. Their first experiments were confined to dogs, but soon transferred to human subjects, and most interesting observations resulted, establishing the value of the new substance. Doses of two to three grammes were at first administered to healthy persons, producing a condition of lassitude, indifference and sleepiness. The same dose then administered to patients suffering from sleeplessness,—nervous and febrile,—produced within one-half to two hours a sound tranquil sleep of five to six hours. Experiments were extensively undertaken among the insane patients of the "Marburger Irrenheilanstalt," by Prof. Cramer and Doctor Rabbas with equally satisfactory results. In no instance did the Sulfonal exert any injurious influence on the organism or produce any evil after effects on the appetite, digestion, respiration or circulation.

Although somewhat slower in taking effect than Chloral, the action of Sulfonal is more prolonged. Doses of two

or three grammes proved safer and more effective than proportionately larger doses of Amylenhydrat. Additional and general investigation which will follow its introduction, will no doubt verify the above outlined observations and insure the popularity of this new hypnotic.—*Lehn & Fink's Circular.*

ATOMICITY AND BIOLOGICAL ACTION.—M. J. Blake has recently reported to the Académie des Sciences the results of a series of experiments on "The Relations between the Atomicity of the Inorganic Elements and their Biological Action." He claims that monotomic elements act on the pulmonary arteries; diatomic elements on the centers of vomiting and on the voluntary and cardiac muscles, except glucinium, which acts on the nerve centers. The triatomic elements act on the respiratory, vasomotor and inhibitory centers, on the cardiac ganglia, and on the pulmonary arteries; and the tetratomic elements act on the respiratory and vasomotor inhibitory centers of the cerebrum, on the spinal cord, the cardiac ganglia, and the pulmonary arteries.

CLINICAL NEUROLOGY.

ANOMALIES IN THE GENITALS OF IDIOTS AND EPILEPTICS.—In the *Journal* of February 25th appeared a review of Madame Solliere's work on the dentition of idiots. The result of a series of researches on the genitals of patients similarly afflicted was published in the *Progrès Médical* of February 18th. This task has been performed by Drs. Bourneville and Solliere. These observers found that certain malformations of the male organs were very frequent in 728 cases of idiocy which they examined. These malformations were phimosis, hypospadias, including the least aggravated form where the meatus lies unusually far back, in the normal site of the frænum, varicocele, atrophy or arrested development of the testicle, crytorchism in various stages, and lastly club-shaped penis. The latter condition signifies a disproportionate size of the glans. The authors note that there is no evidence that this anomaly is produced by bad habits. We believe that they might have safely added that it represents a reversion to a lower type, like the flattened-out ears frequently seen in idiots and weak-minded persons, and very characteristic of the ears of the

higher quadrumana. The authors finally conclude as follows: 1. Idiots and epileptics present very frequent anomalies of the genitals, as proved by careful comparison with sane subjects. 2. These anomalies are least marked in epileptics who have not fallen ill till many years after birth. Their sexual potency, unfortunately, appears less impaired than in more aggravated cases, judging from the relative rarity of cryptorchism amongst them. 3. Atrophy of the testicle is slightly more frequent on the left side. 4. The physical and intellectual degeneration produced by epilepsy seems to exert a distinct influence on the production of varicocele, hardly ever seen in non-epileptic idiots. 5. Epilepsy beginning at birth produces a far more marked arrest of development, especially in the genitals, than when it appears later in life. 6. Idiots, epileptic or otherwise, frequently present a special club-shaped form of the penis, as above described.—*British Med. Jour.*

ATHETOSIS IN A GIRL TWENTY MONTHS OLD.—At the meeting of the Société Médicale des Hôpitaux, of Paris, April 13, 1888, M. Comby stated that he had then under observation a little girl twenty months old, who had been suffering since the eighth month of her life with hemiathetosis of the right side. This child, though nourished at the breast, had nevertheless received too much solid food. She is now subject to attacks of vomiting and diarrhea; she is slightly rachitic. The father is tuberculous; the mother healthy, but she gave birth to a child which died of meningitis when five years old.

The onset of the athetosis was marked by violent convulsions which lasted several days. At present, he says, in the standing position she supports herself principally upon the left limb; she incessantly turns the right foot up and moves the toes. The hand upon the same side is likewise extended and flexed, and moved from side to side as is characteristic of athetosis. The general sensibility is undisturbed; there is nothing abnormal about the eyes, and no muscular atrophy. M. Comby remarks that athetosis is extremely rare in a children's clinic; in 30,000 consultations given in five years, he has never observed but one.—*Bulletin Medical*, April 15, 1888.

PSYCHIATRY.

SUICIDE WITH A PIN.—Thomson reports in the *Medical Press* of February 22, 1888, the following extraordinary case :

The deceased was admitted to the Richmond Hospital, but was found to be dead. He had been arrested as a lunatic running about the streets in his shirt. On examination of the body, the head of a pin was discovered in the fifth intercostal space, two and a half inches from the nipple—downward and inward. The pin had traversed the pericardium, and wounded the anterior wall of the left ventricle. The pericardium contained seventeen and a half ounces of blood fluid, and there was a small rent in the wall a quarter of an inch in diameter, which was filled by blood clot. The surface of the ventricle in contact with the pin was torn to the extent of nearly an inch; a small vein was also wounded; all the internal organs were congested; the urine was albuminous.

MORAL INSANITY.—The Supreme Court of Connecticut, speaking of moral insanity, says: "It is true that the courts have been slow to recognize this form of insanity as an excuse for crime. Nevertheless that it exists is well understood, and that in some cases it is clearly defined by medical and scientific men, cannot be denied." (Anderson *vs.* The State, 43 Conn., 515.)

EDITORIAL.

[*All unsigned Editorials are written by the Editor.*]

Sun-stroke and Insanity.—The affection we usually call sun-stroke is designated by various terms, among which we find Sun Fever, Coup de Soleil, Calenture Heat, Apoplexy, Ictus Solis, Erythismus Tropicus, Heat Exhaustion, and Overheat. Some of these terms are applied to different degrees of the affection by some authors, but in general they may be considered as synonymous expressions.

It consists of a more or less sudden prostration, sometimes caused by exposure to the direct rays of the sun, and often from a prolonged high temperature of the atmosphere. Reynolds designates two varieties: one the cardiac, the other cerebral. Dr. Davis defines three groups or varieties of the affection; one being produced by the direct rays of the sun, which corresponds in nearly all respects with the most severe grade of inflammation of the brain. The phrenitis æstiva of Dr. Gee, as quoted by Wilks. Another group of cases occur under the direct action of the sun, or in a very high temperature of the air, characterized by all the symptoms of sudden and severe congestion of the vessels and meninges. Another group he classes under the head of Heat Exhaustion, which are really the most numerous in practice. They are not so much the result of exposure to the direct rays of the sun, as from the exhaustion of a continuous high temperature, especially in persons already in state of debility or those engaged in active exercise.

A history of sun-stroke can be traced from the earliest times. We read in the sacred writings of a lad, the son of a Shunamite woman, who went out into the field unto his father, where he was overseeing the reapers in the harvest. While there, the lad cried out, "My head! My head!" He was carried to his mother and sat on her knee and died, but was subsequently resuscitated by Elisha, a man of God, a physician and prophet. We also read in the Book of Judith that, "Manassas was her husband, of her tribe and kindred, who died in the barley

harvest, for as he stood overseeing them that bound sheaves in the field, the heat came upon his head, and he fell upon his bed and died in the city of Bethulia.

It is recorded as a promise unto God's people that there should be freedom from the danger of the evil effects of the sun's heat. "Neither shall the heat nor sun smite thee." (Isaiah, 49-10.) "The sun shall not smite thee by day, nor the moon by night." (Psalms, 121-6.) The latter clause probably refers to lunacy.

But for a description of the symptoms of sunstroke we must look to more recent authority and observation. It is sufficient to consider three groups of cases, the cardiac, the cerebral, and heat exhaustion or overheat.

In the cardiac variety, which is seldom seen in this country, especially outside of the larger cities, premonitory symptoms may be felt by the patient, but seldom observed by other persons. The first attention is drawn to the patient by his falling, gasping, and in most severe cases, dying in a few minutes. This form is more frequently observed in tropical countries, especially among soldiers exercising under a burning sun in full dress and accoutrements.

In cerebral or cerebro-spinal cases, the patient is usually warned by premonitory symptoms of the approaching danger. There will be heat of the skin, which, according to Reynolds, "is attended with extreme dryness, and is remarkably ardent and stinging." There will be dizziness, buzzing in the ears, dimness of vision, pain in the head of a more or less intense character, and finally staggering and falling, and loss of consciousness. At this point you are called to see the case. You find the patient with a purplish hue over the face, the breathing is hurried and irregular, and may sometimes be stertorous, the pupils of the eyes variable, contracting and enlarging in an irregular vacillating manner, the eyes will be congested, the pulse will be frequent and variable, though the action of the heart will also be variable, throbbing violently, and then acting feebly and irregularly. In fatal cases these symptoms increase in intensity, the pulse growing more rapid, the face more purple, the breathing more difficult, the temperature increases and death supervenes. The temperature may rise as high as 108 or 110 degrees of the Fahrenheit scale.

As to the pathology of these cases, it is generally conceded that the superheating of the blood is destructive

of its vitality. The normal relation of its component parts are seriously disturbed, or in fatal cases destroyed. The corpuscles become corrugated, the fibrine is greatly diminished, and after death the blood is found to be fluid and dark, and there will be engorgement of the venous side of the circulation. The mortality in these two groups of cases is between forty and fifty per cent.

Many of those in whom the disease does not prove fatal, make an imperfect recovery. There may remain a persistent headache, a trembling or chorea-like affections of the muscles, epilepsy, insanity, or paralysis. The cases grouped under the designation of heat exhaustion or over-heat, differ from the foregoing in degree of severity of the attack. The premonitory symptoms are very similar to those mentioned as occurring in the cerebral group, but in a milder degree, but after the patient has succumbed, instead of the appearance of congestion or fullness, his face is pale or livid, surface cool, pulse quick and weakened, variable and irregular; respiration more or less imperfect, while the temperature may be hardly above the normal, the pupils of the eyes usually are dilated, and there may be relaxation of the sphincters of the bladder and rectum. In the more severe cases the paleness of the surface, coolness of the extremities, and feebleness of the pulse, increase with the supervention of a copious, cold, clammy sweat, irregular sighing respiration, and, in from one to three hours, death may occur from failure of the heart's action or from syncope. But the great majority of these cases will begin to recover in from one to three hours. The color will gradually return to the lips and face, and the action of the heart becomes steadier and stronger, and under proper management of rest and nourishment, the patient will in a few days make a fair recovery.

In those cases of this class that terminate fatally, the *post-mortem* appearances, as set forth by Davis, differ from those in the cerebral group, in there being less evidence of congestion of the vessels of the brain, although there will usually be found a congested state of the venous side of the circulation in the lungs, and the cavities of the right side of the heart will be filled with imperfectly coagulated blood. The difference in the pathology of this and the preceding group, consists, in the fact, that, in the cerebral group, in which there is great heat, there is, in connection with the deteriorating action of high

temperature upon the quality of the blood, a primary and direct dilatation of the vessels of the brain and its membranes, also, in the lungs, from vasomotor paralysis, causing early and intense local congestion of those organs with diminished oxygenation and coagulability of the blood, and consequent incapacity to maintain its natural impression upon the tissues of the body; while in this group of cases the blood undergoes alteration of its properties, and especially that property he calls vital affinity, without special local congestion or hyperæmia of the brain. This absence of the local hyperæmia causes the coldness, or low temperature in this class of cases, while its presence explains the rapid increase of heat in the cerebral cases.

It is not the purpose of this paper to discuss the diagnosis or treatment of this disease. From what has previously been said it is evident that an affection of so serious a nature must in a certain per cent. of cases leave as a sequel lesions of the nervous system more or less permanent in character and injurious in consequences. Epilepsy of a persistent character is occasionally one of these results; muscular tremor another; migraine paralysis and various neuroses are liable to follow in the train of sequences. But I wish more especially to direct attention to insanity as one of the results that may occasionally be expected.

The first patient was received into the Illinois Southern Hospital for the Insane on the 20th of December, 1873. The cause of his insanity, as stated in the verdict rendered by the jury before whom his case was investigated, is sun-stroke. Since that time the number of cases received in which sun-stroke or overheat is assigned as the cause of insanity is fifty-two, being a fraction over 2.26 per cent. of all the cases admitted.

A classification of these cases shows that thirty-six were complicated, seven were complicated with hereditary tendencies, seven were complicated with irregular and vicious habits, one was complicated with injury to the head, one was unknown. Of the uncomplicated cases sixteen recovered and four died. Of the seven having hereditary complications, one died, and none fully recovered. Of the seven complicated with vicious habits, two died, and none recovered. Of the whole fifty-two cases, sixteen recovered, seven died, one escaped, one was discharged as not insane, four were discharged improved, five

much improved, and five not improved. There remain therefore in the hospital as incurably insane thirteen, to which we may add the five discharged not improved, making eighteen cases, or thirty-four per cent., that will in all probability die insane.

The character of the insanity of these cases as shown by the records is as follows: Acute mania eighteen, chronic mania seven, epileptic mania five, recurrent mania five, melancholia twelve, dementia three, not stated two. The causes of death of the seven who died were, from intercurrent diseases four, viz., abscess of lung one, pneumonia one, embolism one, cerebral hemorrhage one. From the primary affection three, viz., exhaustion from chronic mania one, in epileptic status one, general paralysis one.

These statistics show the danger that threatens the brain and nervous system in cases of sun-stroke and serve to forewarn us of the possible results of unguarded exposure to the burning sun or continuous heat of portions of the summer season; and, it may be added, that this danger is increased by vicious habits that tend to exhaust the vitality. Efforts at prevention promise far better results than efforts to cure.

One of the cases of acute mania complicated with bad habits was the man who died of general paralysis of the insane. He almost from the first had strong delusions of grandeur, of immense wealth and unlimited power. He was admitted August 24th, 1878, four weeks after the sun-stroke, and died May 5th, 1882. The first eighteen months he was greatly excited and often dangerous. After that his decline was gradual and steady. The decline affected mental and muscular powers alike. He became demented and was unable to walk without aid, and finally died choking from inability to swallow his food. The *post-mortem* examination revealed a case of chronic inflammation of the membranes of the brain, evidently commencing at the anterior part of the cerebrum and gradually extending backwards. Thickening of the membranes from exudation was most marked in the anterior portion. There was adhesion of the membranes to each other and to the cortex of the brain. The watery fluids were considerably in excess. The arachnoid was opaque in patches, especially at the anterior portion. There was some adhesion of the hemispheres through the longitudinal fissure. The point of departure of the disease was evidently in the upper anterior portion. There were spots of softening in the white

matter. The notes taken of this case at the time have in some mysterious manner disappeared, which must account for the absence of more extensive details.

The statistics given by Mickle in his work on General Paralysis, show that 2.3 per cent. of all cases are caused by sun-stroke. Under the head of Pathology, he also says, that foci in the cortex are the starting points; and that he has never seen a clear case of general paralysis in which, if a necropsy was made he did not, then and there, find distinct evidences of disease of the cerebral cortex and meninges, even by the unaided senses. Mental defect or disorder plays an essential part in a vast majority, if not all cases, of general paralysis. It is generally conceded that general paralysis of the insane is an incurable disease, from whatever cause it may originate.

H. WARDNER, M. D., Anna, Ill.

American International Congress of Medical Jurisprudence.—It is announced by Mr. Clark Bell, President of the Medico-Legal Society of New York, that that body has decided to hold an International Congress of Medical Jurisprudence, at which representatives from all countries will be invited to attend and contribute papers. The announcement reads as follows:

The immense progress made in this century in the sciences of biology, neurology, psychiatry, physiology, psychology and toxicology have enhanced our knowledge of the functions of brain, nervous organization, and elevated medico-legal science to a higher rank than it ever occupied before. The application of justice is governed by a higher sense of humanity, with our increased knowledge of the physical organization of the human mind. The conviction has therefore gained ground, that medicine and jurisprudence must combine closer for a clearer definition, and the better understanding of the principles that are rooted in both branches of learning, in the exercise of functions which require practical application in the government of society. This is the special field of medico-legal science, and it calls for the most intimate relationship between the faculties of medicine and of law. Eminent men in both hemispheres have rendered great services in the elucidation of the great principles underlying medico-legal science. In most of the European countries forensic medicine is taught by great specialists attached to the universities, and the same is done in some of our own colleges, nevertheless, there is no uniform practice in the application of these principles to the administration of justice. The courts in Germany obtain the opinions of experts officially attached there, which are, however, often disregarded, and neither in this coun-

try nor in Europe are the courts bound by the professional opinions of the medical expert. The divergence of views must be greatly ascribed to the obscurity which still surrounds certain scientific facts outside of the medical profession, the necessary effect of the absence of intimate and close relationship between the faculties of law and medicine.

To bring about a nearer approach of the two learned professions in the interest of medico-legal science and a more uniform application of its principles throughout the civilized world, our Society has determined to invite the votaries of medico-legal science, the men who have attained eminence in the professions of medicine and law in any part of the world, whose voice will be heard with that respect which is accorded to authority, to meet at an international congress to be held in the city of New York during the year 1889, at such a place and time as will be determined later on.

In issuing this call we voice the sentiments of leading jurists and alienists, of prominent members of the bar, and the medical faculty of our whole country, and we may promise to all the gentlemen who will attend a cordial welcome by our citizens and members.

A congress like this will advance mightily the cause of justice and humanity, and will pave the way for a clearer definition of the principles which should govern the administration of justice in our enlightened age. The intercourse between men eminent in their profession, the exchange of views between them, the treatment and discussions of questions that form an integral part of both law and medicine by those whose voices are recognized as the leaders of science, will form another link in the universality of all true science.

The Congress will hold a session of four days. Members of the Medico-Legal Society will entertain as guests all foreign visitors, and arrangements will be made for reduced rates of ocean and railway travel for those who attend from a distance. The leading societies, home and foreign, who are pursuing kindred studies, are invited to send delegates. The General Committee of Arrangements will be announced later, as soon as formed. The Sub-Committee, which now has the affairs in charge, is composed as follows: Sub-Committee on International Congress of Medical Jurisprudence—Moritz Ellinger, Esq., Chairman. Clark Bell, Esq., Dr. Isaac Lewis Peet, Stephen Smith, M. D., Judge Noah Davis, E.W. Chamberlain, Esq. The Chairman of the Sub-Committee, Mr. Moritz Ellinger, is the Corresponding Secretary of the Medico-Legal Society.

Members of the Society residing in the various States of the Union or the Canadas will be entertained by the resident members on the same footing as foreign delegates or invited guests. All Active, Honorary or Corresponding members who will contribute papers, to be read at this Congress, will please forward their names and the title of their papers to the Secretary of the Sub-Committee or to the President of the Society, at No. 57 Broadway, New York City.

Officers of Scientific Bodies, in sympathy with Medico-Legal studies, will please lay this announcement before the members of their societies.

All students of Forensic Medicine or its kindred and allied sciences are invited to attend and to contribute papers to be read. We request you to inform us of your decision and of the subject which you may eventually desire to speak upon, or the treatise which you may submit. The sooner you can communicate your pleasure to us, the more you will facilitate the labors of the committee who are charged with the necessary preparations for the work.

Antipyrine Laudamus!—The laudation of antipyrine in the literature of Medicine has gone far beyond its merits, and we must remind the over zealous and unrestrainedly enthusiastic Dujardin Beaumetz that he has gone a little too far with his praises of the drug for the welfare of our patients or the truth of therapeutics. Antipyrine is neither the always indicated antifebrile, anti-pain or acute convulsive remedy it is claimed by its zealous votaries to be and the Alienist must sound the same note of warning to such therapeutists in neurology as may have a little faith in its sayings, as it sounded some time back in regard to the much and over-lauded cocaine.

Antipyrine will not relieve the pains of locomotor ataxia. Antipyrine will not materially modify epilepsy or other convulsive disease for any considerable length of time. Antipyrine will not cure persistent cephalalgia, though it will sometimes, but by far not in the majority of cases, relieve migraine.

But it will arrest renal secretion, and its danger in fevers is thereby to be considered.

It is a good remedy in carefully selected forms of insomnia, but it will promptly kill in insomnia associated with double pneumonia, and it is alike dangerous in insomnia associated with renal failure.

It is a good remedy in polyuria if your sole aim is to stop the action of the kidneys. It ought not to be given in cardiac angina with organic disease, in pulmonary or renal congestion.

It ought not to be given often to the same patient during the same day. Our conviction, from careful observation of its unsatisfactory sequences, both where convalescence has resulted and where death has ensued after its use, is against its often employment where organic embarrassment of either heart, lungs or kidneys complicate the symptoms calling for its anodyne or antipyretic powers.

It is a remedy for exceptional rather than general use, Mons. Dujardin Beaumetz to the contrary notwithstanding. The following is in brief the record of its untoward

effects in the two last cases in which we employed this drug.

A. E. M. was a young and temperate book-keeper, who after being stricken with pneumonia became insane. His physician, who was a homœopath, regarded him as convalescent, but we found on auscultation, unresolved hepatization of the left lung and fresh crepitus and bronchial râles throughout the right lung. The heart's movements were also embarrassed from endocardial and pericardial inflammatory changes in sac and valves. The patient had in his delirium during the day before got out of bed, gone down stairs on a damp cold day in his night-clothes and caught fresh cold. He had been for several days and nights sleepless and suffering pain, and antipyrine was decided upon to fill the double indication. Two fifteen-grain doses secured sleep during the entire night, but the next day the patient's face was livid and breathing markedly embarrassed. He died the day after.

Another patient of thirty-eight years, a married lady of gouty, rheumatic diathesis and a history of many attacks of rheumatism and neuralgia and neuritis, the original attack beginning in the great toe, suffering from intercostal neuritis and insomnia, was given fifteen-grain doses twice during the day and once at night. Under these the heart's beat became intermittent, fell to below forty in a minute and required ammoniacal stimulants, digitalis and Mariani wine and thirty-six hours in the recumbent position, with strong beef-tea and digested nutrients, before the heart regained its regular rhythm.

We might write a book on antipyrine, and its conclusions from our clinical experience would be, employ with caution and not often. Repeated doses in embarrassed states of lung, heart or kidneys are hazardous.

Infantile Opium "Sucht."—The *Medical Register* of June 19th, referring to infant morphiomaniacs and a request from Dr. B. Mattison for information on the subject, gives an account of a woman of Dr. Shoemaker's acquaintance in whom the constant use of opium had caused her one abortion and the speedy loss of two children, who subsequently learned the secret of preventing disease in her offspring by increasing the quantity of opium consumed by her during pregnancy and lactation. Dr. Shoemaker confesses that whether this fact has influenced the fate of the child thus far he does not know, but we know of a number of

instances where women who were neuralgic and hyperæsthetic during pregnancy and became addicted to morphia, have given birth to children who became suffering and puny shortly after birth, the mother's condition not demanding and the mother not taking the drug as previously, the sudden cessation by the mother of the use of opium prescribed for pain, leaving her irritable and nervous and making still greater impress upon the child's nutritional processes. When opium has been used by a pregnant mother with regularity, even in small doses, during the later stages of utero-gestation, both she and the new-born child must be gradually weaned from it to avoid the violent neural shock the systems of both mother and child sustain from sudden deprivation. The peculiarly charming effects of a drop or two of paregoric with certain infants, not in stupefying doses, is doubtless due to intrauterine familiarity with its lethal influence, obtained through the mother's blood when opium has been much taken by the *enciente* mother. After birth the lacteal font is lacking to the new-born infant if the stimulus the fœtus had become accustomed to get unconsciously from its mother's blood is not in the milk.

Erlenmeyer has not overdrawn the picture of morphine eaters' young offspring, nor has the writer in the *British Medical Journal* to whom Dr. Shoemaker refers in the editorial article we are now discussing, overdescribed "*the effects of opium eating on the fœtus in utero.*"

There is a practical lesson familiar enough to neurologists of large experience, but perhaps not always fully appreciated by the general practitioner, and that is, in all cases where opium has been given by the physician to the *enciente* mother with daily regularity for any considerable time preceding and to the close of her confinement, to let both the patient and her enslaved offspring down easy by regular and systematized sustained graduations, recuperating the systems of both mother and child by normal neural support as each round of the artificial ladder is removed, for just after a confinement and birth the organizations of both mother and offspring are far more sentient to the shock of sudden deprivation than they would be a few weeks later. It is not the toxic power of opium we have to fear in these cases when opium has been given to the mother in small doses (not exceeding half a grain of morphia probably, three times in twenty-four hours), but the sudden deprivation of its stimulant influence.

The time for cautious consideration is when opium seems indicated in the case of an *enciente* patient, but incipient lack of prudence and caution are no justification for final rashness. If we lead our patients charmingly up the mountain we are not thereby justified in suddenly casting them down without our help over the precipice. *Descensus mons meconi non facilis.* On the contrary we should let them down step by step as we lead them up. They need our help both ways, and when we take away opium—as we certainly should—we should otherwise support them. The opium *habitué's* nervous system asks for the support of opium or its more than equivalent in chemical and therapeutic bread. We have no right to give it only a stone.

Preliminary Programme of the Congress of American Physicians and Surgeons, to be held in Washington, D. C., on the evenings of September 18th, 19th and 20th, 1888.

OFFICERS: President, John S. Billings, M. D., U. S. A. Vice-Presidents, ex-officio: President of the American Surgical Association, D. Hayes Agnew, M. D., Philadelphia, Pa.; President of the American Association of Genito-Urinary Surgeons, Edward L. Keyes, M. D., New York City; President of the American Laryngological Association, Rufus P. Lincoln, M. D., New York City; President of the American Climatological Association, Alfred L. Loomis, M. D., New York City; President of Association of American Physicians, William H. Draper, M. D., New York City; President of the American Otological Society, Jonathan S. Prout, M. D., Brooklyn, N. Y.; President of the American Ophthalmological Society, William F. Norris, M. D., Philadelphia, Pa.; President of the American Neurological Association, James J. Putnam, M. D., Boston, Mass.; President of the American Dermatological Association, I. E. Atkinson, M. D., Baltimore, Md.; President of the American Physiological Society, Henry P. Bowditch, M. D., Boston, Mass.; President of the American Orthopedic Association, Newton M. Shaffer, M. D., New York City; Chairman of the Executive Committee, William Pepper, M. D., Philadelphia, Pa.; Treasurer, D. B. St. John Roosa, M. D., New York City; Secretary, William H. Carmalt, M. D., New Haven, Conn.

PROGRAMME.—The President's Inaugural Address, by William H. Draper, New York. *Discussions*: The Relation between Trophic Lesions and Diseases of the Nervous System, Referee—Edward C. Seguin, New York, Co-Referee—Wm. T. Councilman, Baltimore; The Absolute and Relative Value of the Presence of Albumen and Casts, and of Renal Inadequacy in the Diagnosis and Prognosis of Diseases of the Kidney, Referee—Robert T. Edes, Washington, Co-Referee Edward G. Janeway, New York. *Papers*: The Cardiac Changes in

Chronic Bright's Disease, by Alfred L. Loomis, New York; The Relation between Chronic Interstitial Nephritis and Angina Pectoris, by Samuel C. Chew, Baltimore; Disturbances of the Heart-Rhythm with Reference to their Causation and their Value in Diagnosis, by Gustavus Baumgarten, St. Louis; Fatty Heart, by Frederick Forcheimer, Cincinnati; The Cardiac Lesions producing the Presystolic Murmur, by Frank Donaldson, Baltimore; The Treatment of Valvular Affections of the Heart, by Jacob M. DaCosta, Philadelphia; Clinical Investigation in the Treatment of Cardiac Disease, by James K. Thacher, New Haven; Causal Therapeutics in the Infectious Diseases, by James C. Wilson, Philadelphia; Management of the Stage of Convalescence in Typhoid Fever, by James H. Hutchinson, Philadelphia; The Geographical Differences in Typhoid Fever in the United States, by W. W. Johnston, Washington; The Pathology of the Thymus Gland, by Abraham Jacobi, New York; Gastric Neurasthenia, by George M. Garland, Boston; Neuritis, by Francis T. Miles, Baltimore; The New Cæsarean Section, by William T. Lusk, New York; Is Hystero-Epilepsy Better Treated by Medical or Surgical Means? by William M. Polk, New York; Subject not yet announced, by Samuel C. Busey, Washington; Subject not yet announced, by George Ross, Montreal; Demonstration in Pathological Anatomy, by T. Mitchell Prudden, New York, and William H. Welch, Baltimore.

SUBJECTS FOR REPORT AND DISCUSSION.—Tuesday evening, September 18th. Intestinal Obstruction in its Medical and Surgical Relations: Papers will be read by Dr. Reginald H. Fitz of Boston, Professor of Pathological Anatomy in Harvard University, and Dr. Nicholas Senn of Milwaukee, Professor of Surgery in the College of Physicians and Surgeons, Chicago, Ills., followed by a discussion. Wednesday evening, September 19th. Cerebral Localization in its Practical Relations. Papers will be read by Dr. Charles K. Mills of Philadelphia, Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and College for Graduates in Medicine, and Dr. Roswell Park, Professor of Surgery in the Buffalo Medical College, followed by a discussion. Thursday evening, September 20th. Address by the President, John S. Billings, M. D., U. S. Army, to be followed by a General Reception in the United States Army Museum Building.

The Nature and Definition of Insanity.—Among alienists the search after a correct definition of insanity which would be something more than a description of certain phases of mental aberration, has been as diligent and persevering as that made by the alchemist philosophers of old for the imaginary but unrealized process of transmuting the baser metals into gold, or the philosopher's stone, whose talismanic touch might confer immortal youth; and, like the fruitless labor of these somnambulistic workers, the frequent unfruitful failures of all former definitions of insanity to define it, has led many good alienists to

declare a perfect definition impossible. But it is not impossible to define insanity or anything else if we fully understand the thing to be defined.

The difficulty with definitions of insanity has grown out of the inadequate and incomplete conceptions of the disease—from the misconceptions of Heinroth, Sheppard and John Locke down to the later definition of Andrew Combe, the latter being the basis of most medical and forensic definitions, a definition which, though one of the most really descriptive and an almost perfect definition of acquired adult insanity, excludes all teratological defect and presents the anomalous alternative of providing a separate and distinctive place for idiocy, imbecility and all congenital mental unsoundness.

Insanity is a disease of the brain, affecting the mind, but all disease of the brain that affects the mind is not insanity.

Insanity is a disease of the brain disturbing the mind, but any disease may affect the mind and disturb its accustomed action.

Insanity is a change of character produced by disease, but all change of character produced by disease is not insanity.

The true basis of every rational definition of mental derangement must be *delusive mental perversion engendered by disease affecting the mind*, displayed in the conduct or speech of the individual, as compared with his natural self or what ought to have been (if perverted or arrested development had not prevented its display) the natural self-type of the individual. The character may be decidedly delusional without the appearance of any organized and definite delusion in speech or conduct, and either the speech or conduct, or both, of the insane man evince to the expert, if studied closely, always some evidence of delusive feeling or impulsion. The classical intellectual delusions need not be sought for in every case with the expectation of finding them, for they are not there; even, in the majority of all the cases, an alienist of large experience may not see them, but a something in the speech or character of the insane man shows us, even when we cannot define his delusion, that the cerebro-psychical mechanism is under the dominion of delusive impression, because his speech or conduct, or both, reveal the fact. Definite and definable delusion may not be apparent, in fact are often absent, in certain phases and forms of insanity, and the

special delusions of the books need not be looked for, for they are not present; but the man's character is a delusion, his conduct evinces it, or his actions, which speak often more forcibly than human language, and only the dominion of delusive impression explains the apparent disharmony between the patient and his normal environment, and reveals that altered *ego* which all alienists discern in mental disease.

Let the Superintendents Manage their Asylums.—An instance of "pernicious activity" painful to witness in one whose exceptionally long professional life has been one of good and useful work, was lately illustrated in the resolution offered before the State Medical Association of Pennsylvania, asking the State Legislature, without solicitation and without the concurrence of the medical heads of the State asylums for the insane, to divest the superintendents of all executive responsibility except the medical treatment of their patients, meaning thereby prescribing for them the necessary medicine. The State Society of Pennsylvania prudently and justly tabled the mischievous resolution, if for no other reason than the fact that their medical brethren in charge of the institutions for the insane of that State did not desire to have their essential executive prerogatives abridged. Such an act of comity and confidence is due Doctors Curwen, Shultz and Gerhard, for they are experienced in hospital management, know well the essentials of successful treatment of the insane, and in their views are in accord with the experience-founded views of the Association of Superintendents. Had Doctor Hiram Corson ever had charge of an institution for the care and treatment of the insane, he would never have proposed such a foolish "reform(?)" measure, for everything about the insane either tends to promote, retard or prevent recovery, from the blacksmith, painter, carpenter or engineer, down to the laundrywomen and the cooks, as well as the attendants, teamsters, gardeners, etc., to say nothing of the physician and his medicines, the matrons, apothecaries, dress-makers, etc. The physician who succeeds with the insane must regulate and prescribe, as he does their medicines, all the influences that bear upon them for good or ill. The successful medical superintendent of a hospital for the insane should be the chief executive official of the institution, having the directing management of everything and every-

body connected with the institution in such a manner as to come in contact with or contribute to the comfort of the patients, and be only subject to the lawful rules and regulations of the board of management. He should have the power, unrestricted, of employing and discharging all employes and should exercise it promptly at all proper times. He should dismiss a harmful employe at once, as he would promptly remove with an emetic or a stomach-pump a poisonous drug swallowed by a patient through some incompetent attendant's carelessness. He should prescribe and regulate all moral influences about his patients as well as the chemical and physiological potencies of drugs, for often these are more potent for good or harm than the medicines from the apothecary shop. He should govern his hospital as a good captain his ship, as a good general commands his army, or as any proper business is successfully conducted, as if it had a directing head competent to be entrusted with executive power, subject only to the rules and regulations of the institution. He should be the immediate head and front whatever power may be behind him. A responsible chief executive physician, with a corps of competent assistants, a judicious legislative board and wise laws to govern the institution is the best plan of government, as demonstrated by experience, to most successfully manage a State hospital for the insane.

The Unjust and Absurd Insane Commitment Law of Illinois has lately been most justly attacked by Drs. N. S. Davis, J. G. Kiernan, G. C. Paoli and others, at a meeting of the Chicago Medical Society.

The law violates the inalienable rights of the insane to speedy relief without undue legal embarrassment and delay in securing prompt treatment.

It robs many insane of their rightful recovery both by delaying their prompt admission to asylum treatment and by barring some patients out altogether.

It outrages the privacy due the victims in their affliction, and their families. It is absolutely impracticable in its operation in regard to the most important cases. The cases most imperatively demanding immediate treatment often cannot be brought before a jury in their early stages, and some cases would be made insane for life that might otherwise be cured, by being taken before a jury for trial.

Imagine a patient with delusions of persecution and

impending imprisonment, or in the inflammatory stage of meningitis or peritonitis having to go before a jury and listen to the testimony *pro* and *con* of a lunacy inquisition and the effect upon the disease-perverted imagination of the patient.

The Illinois law is an instance of the blind leading the blind and all falling into the ditch together. The Illinois law was framed at the instance of an insane woman who imagined she had been greatly wronged; and the weak-minded legislative idiots who took the alarm at her bidding and framed the absurd, unjust and impracticable law which is now one of the statutes of Illinois, have already done the mentally-maimed of our sister State an infinite deal of harm. It ought to be speedily erased, and the sick in mind—the wounded in spirit of that State—given a better chance than they now have for prompt and less public admission for the treatment their malady demands.

If the present statute should remain long in force, Illinois will be filled with chronic lunatics, made such by the wrongful and needless delays and embarrassments to early admission caused by its operation.

Insanity is no crime. It is a disease in which a mental life is imperilled and we should be as quick to rescue the insane as to save the drowning or rescue the battle-maimed. But Illinois would first, before making the imperatively-demanded effort at rescue and resuscitation, be deliberately assured to the satisfaction of a jury of sailors or soldiers that the poor fellow crying for help is really drowning and not feigning, or wounded and not frightened, while a true and sensible humanity would make the rescue even at the risk of being occasionally mistaken. It were far better that one sane man should be unjustly sent to an asylum than that a hundred insane be kept out till their insanity becomes hopelessly incurable. Sane men can generally take care of themselves. The State should, unawed by false alarm; be just to its helpless insane who have a right to the speedy treatment that will afford them the least chance of early cure.

Be Liberal Towards Your Hospitals, City Fathers. It Pays.—The manner in which a people provides for its sick and afflicted in mind and body measures its civilization. Our age boasts not of its vast amphitheatres, where life of beast or man are held cheaply and applause greets the deadly thrust, but of its charities

which save life and mind and limb and commemorate the humanitarian sentiments.

The insane and the sick, once well-to-do citizens, paying taxes like the rest of us often and helping to carry the common burden that falls on each member of the State, have rights to care and treatment when afflicted which a humane people will not ignore. They have a right, too, at our hands, to something more than to be merely put out of the way where the sight of their misery will not daily annoy us. They have a right to the best provision we can make to speedily and effectually restore them to the usefulness of healthy and rational life, and true municipal policy is on the side of the most liberal provision for their prompt recovery and against all niggardly parsimoniousness. Good hospitals, good asylums, good poorhouses, liberally provided with the best medical skill and appliances for speedy and effectual cure, are the best and cheapest in the long run to the people. Speedy cures of the insane and otherwise afflicted, and their prompt return to self-support, to be no longer burdens on the State, is both policy and justice, business and duty, whilst a parsimonious, niggardly policy is uneconomical as well as unwise and unhumane. The sick recover as wrecked buildings are reconstructed. By furnishing abundantly the materials of repair and an inadequate supply of wholesome food, good medicines and skilled physicians, will give tardy instead of speedy cures, deaths in lieu of recoveries and chronic paupers—insane, sick, crippled—in the place of citizens restored to the workshops and the walks of business or professional life. Penny-wise managements of our charities for the sick is always found foolish policy, increasing rather than lightening the city's eleemosynary burden.

When quarters are close and patients are crowded cures are slow and few. The insane and the nervous especially suffer, and all patients when fevers and epidemics prevail.

A parsimonious economy might work elsewhere, but in the health department of a great city it is the most uneconomical of policies, doubling expense with every nominal curtailment, through the chronic invalidism it engenders in the city's wards, many of whom might, under more liberal treatment, be returned well to homes and remunerative occupations, thus being kept out of that perpetual pauper class which is so burdensome to municipalities.

Resolutions adopted at the Thirteenth Annual Session of the State Medical Society of Arkansas, held at Fort Smith, April 25, 26 and 27, 1888, and ordered to be furnished to the American Medical Association, the medical and religious press, and to the State Medical Societies, soliciting their co-operation in bringing about a correction of these grievous and palpable errors:

Resolved. That the members of the State Medical Society of Arkansas have for years observed with pain and mortification the patronage given to charlatanism in all its multifarious aspects by the religious press of our country.

Resolved, further and most specifically, 'That the appearance in religious papers, ostensibly published for the inculcation of truth and morality, of serious homilies on prayer and praise, side by side with cures for consumption, cancer, Bright's disease and other incurable ailments to which an editorial endorsement is often given, as well as secret preparations under the cloak of remedies for disease, but really intended for purposes of feticide and other immoral uses, largely tends to shake the confidence of the profession of medicine in the integrity and purpose of the managers and editors of such journals.

Resolved, further, That it has been the well-known custom of the profession to render services gratuitously to clergymen, which we do not regret nor do we propose to recall, yet we must assert that the frequent occurrence of endorsements and recommendations of the clergy of peripatetic doctors and advertising charlatans has in many instances been the only reward of our gratuitous services.

Resolved, further, That, we are aware that the editors of religious newspapers admit the painful situation in which these advertisements place them, and attempt to excuse themselves by saying that it is necessary to take these advertisements in order to obtain means to conduct their papers; but, in the language of orthodox theology we would say: "Put behind you that damnable doctrine that we must do evil that good may come."

Resolved, further, That, as a Society, we declare that the continued perpetration of the above offences by some of the clergy and religious press brings harm to the bodies of their constituency, and damages materially their influence upon the thinking class of the medical profession.

Resolved, That the Secretary be instructed to furnish copies of these resolutions to the religious and medical press of the United States, to the American Medical Association and to the State Medical Societies, soliciting their co-operation in bringing about a correction of these grievous and palpable errors.

How would the Divine Master, who said "Whatever ye would that men should do unto you, do ye even so to them," regard these vile, seductive deceptions and false promises that delude the unwary into reliance on the broken reeds of quackery till the time for real relief passes?

"Be not deceived," brethren of the religious press, "God is not mocked." "As a man sows," whether religious or secular editor, "that shall he also reap." As the pure in heart are to see God, so will contemporaries who keep their printed pages clean and pure, come nearest "getting there," whither even you, brethren of the medical fraternity, hope to go in the sweet by-and-by, when and where the villainy of unrestrained quackery is not.

Association of American Institutions for Idiotic and Feeble-Minded Persons.—The twelfth annual session will commence at the Rossio House, Toronto, Canada, on Monday, June 18th, at 3 o'clock P. M., moving to Orillia on the following morning. By resolutions of previous sessions, the following reports will be called for: "On Causation of Idiocy," etc., Superintendents reporting from their earliest received cases (Min. p. 289); "On Status of the Work before the People and Legislatures of the various States" (Min. p. 43); "On Development and Progress of the Institutions Represented;" "Improvements in School Training and Hospital Care Introduced during the Past Year;" "Clinical Reports of Special Cases" (Min. p. 41).

The following papers have been promised: 1, The Annual Address, by Dr. George H. Knight, of Lakeville, Conn. 2, "Clinical Notes on 'Mongolian' Idiocy, and Pathological Examination of Two Cases," by Dr. A. W. Wilmarth, of Elwyn, Penn. 3, "Special Treatment of Paralytic and Epileptic Idiocy," by Dr. A. E. Osborne, of Santa Clara, Cal. 4, "Industrial Education at the Kentucky Institution," by Dr. J. Q. A. Stewart, of Frankfort, Ky. 5, "Kindergarten for Feeble-Minded Children," by Dr. S. J. Fort, of Ellicott City, Md. 6, "A Study of Twenty Cases of Hemiplegic Idiocy, at Elwyn," by Prof. Wm. Osler, of Philadelphia, Penn. 7, "Notes on Examination of Eyes, at Elwyn," by Dr. Chas. Oliver, of Philadelphia. 8, "What is Meant by Physiological Education?" by Dr. Isaac N. Kerlin, Elwyn, Penn. 9, "The Present Condition of the Education of Imbeciles, in Great Britain," by George E. Shuttleworth, M. D., Royal Albert Asylum, Lancaster, England.

Congress of American Physicians and Surgeons.—The Congress of American Physicians and Surgeons is a conjoint meeting of certain National Medical Societies, so arranged that, while each Society preserves

its own autonomy in every respect, and has its own meetings, papers and discussions during the day—the members of all the Societies meet together in the evenings to carry out the objects of the Congress. The main purpose of the Congress is the presentation and discussion of scientific subjects selected with reference to their general interest. It is intended that the Congress shall meet at Washington, D. C., once in three years. The President of each future Congress is to be elected by the Societies, each Society having the right to elect in turn. The officers of the Congress are a President, a Secretary and a Treasurer, and as many Vice-Presidents as there are Societies taking part; the Vice-Presidents being the Presidents-elect of the several Societies for the year of the Congress. The business of the Congress is managed by an Executive Committee composed of one representative appointed by each Society taking part. The President and Secretary of the Congress are ex-officio members of this Committee. The arrangement of the programme for the Congress of 1888, has been delegated to a Committee consisting of the President of the Congress, the Chairman of the Executive Committee, and the Secretary of the Congress.

Notice to Subscribers.—Subscribers to the ALIENIST AND NEUROLOGIST will do us a favor by remitting subscriptions direct to this journal, and not through publishers. The latter demand deductions, and the price of the A. and N. is *five dollars per annum net*, and it's worth every cent of the money.

“Best Tonic.”—We acknowledge the receipt of a sample bottle of the “Best Tonic,” but we do not acknowledge it to be the best tonic in fact of its kind.

CORRESPONDENCE.

The American Medical Association had a good meeting at Cincinnati. This association ought to be the popular and exclusively representative body of the profession. To achieve its highest destiny there are some things it ought to do which it does not do, and some things it does which it ought not to do.

It ought to be careful to honor the worthy men only and always in the profession with its highest office. The next president, Dr. Lawson, is a good man. It ought not to require a man to be a candidate and attend the meeting at which the election is held in order to be eligible to the presidency. This is a political trick to secure office to the hangers on and wire pullers instead of the best man always.

It ought to invite rather than close discussion on certain features of the code, especially on the question of patents, and abolish the absurd provision against a medical man controlling his own inventions.

The *Journal* of the association is financially prosperous, but a journal is not needed at such a cost when a dozen reputable weekly journals would publish the proceedings at little or no cost to the association. The association funds had better be spent in honoring the memory of dead medical men who served their profession well in life, and in providing for their indigent families. The twenty-five thousand dollars collected annually for the *Journal* would provide an insurance fund that would rescue most of the wrecked families of our brethren who have toiled and gone poverty-stricken and broken-hearted to receive the reward of faithful service in this world unrequited.

The code needs some revision, so as to make it more tolerant on some subjects, notably that of individual opinion on the question of consultations.

No regular physician cares to conduct a case jointly with an irregular, or to consult in the conduct of a case to be managed by an irregular; but humanity requires that first conferences should be tolerated and all the irregular knows about the previous conduct of the case learned, before taking final charge, if in the judgment of the regular this is desirable; and this should not be characterized as a consultation and condemned—the code does not now condemn this any more than it condemns getting all needful information from any other source—the nurse or the family. The code needs to be better understood. Free discussion would bring out its good features and secure wise amendments. The patent clause is not wise.

CINCINNATUS.

IN MEMORIAM.

DR. WM. B. HAZARD.—At a meeting of the Board of Trustees and Faculty of the St. Louis College of Physicians and Surgeons to take action on the death of Dr. William B. Hazard, of which college deceased was one of the founders and held, to the time of his death, the chair of Neurology, the following were unanimously adopted:

Whereas, in the death of Dr. Wm. B. Hazard the Board of Trustees and Faculty feel called upon to voice their sorrow over the demise of a valued co-laborer in the affairs of the St. Louis College of Physicians and Surgeons and until recently associated with its teaching corps, whose praise he won by fidelity to its trusts and the exhibition of high professional attainments, for which he was most conspicuous; and

Whereas, While we mourn the loss of one in the noonday of life, in the forefront of useful endeavor and just ready to dispense the rich fruitage of a mind well-stored to infirm humanity, it is

Resolved, That in his ceaseless labors to promote the upbuilding of the profession he adorned as teacher, writer and defender, should serve as a finger-board to admonish those who are eager to scale the heights that reach on to distinction that there can be no advancement without courageous effort.

Resolved, That we extend to the stricken family of the late Dr. Hazard our deepest sympathy and convey to them a copy of these resolutions; also that copies be furnished to the press, and that these resolutions be spread upon the minutes of this institution.

Dr. Hazard was formerly superintendent and physician of the St. Louis Insane Hospital, having succeeded and preceded Dr. Charles W. Stevens in charge of that institution, and was once physician in charge of the St. Louis City Hospital, filling both positions creditably to himself, to the public and the profession.

Dr. Hazard was a well-informed and scholarly physician and extremely friendly towards those whom he regarded as his friends and uncompromisingly hostile towards those whom he considered his enemies. He was at one time the editor of the *Clinical Review*, which under his caustic and able management gained the sobriquet of the *Cynical Review*. Dr. Hazard never spared anyone whom he deemed entitled to a lampooning, or any cause which he thought needed "showing up." As an editor he was fearless, caustic, powerful, and sometimes hasty, impol-

itic and unfair in his conclusions and denunciations, but he was often right. The *Clinical Review* was a ventilator of unsavory schemes and a demolisher of shams. More men have lived and died in the ranks of medical journalism than Dr. Hazard, and so far as we knew him his aim was the welfare of his profession. His popular medical articles in the *Globe-Democrat* of this city were fruitful sources of real enlightenment to the people, prepared with a facile pen portraying plain facts in a plain and attractive way.

Dr. Hazard died in the noontide of his powers; he was but forty-five years of age. His useful and studious life gave promise of a future of value to himself and his profession. His sun set while it was yet day. His friends can but regret that his light was permitted to brighten his profession and his household no longer, for it was still a rising sun, and his night, to all appearances, was yet afar off.

He died in St. Louis, on the 19th of May, of albuminuric nephritis.

DR. J. MILNER FOTHERGILL's recent death is a loss which neurology as well as general medicine keenly feels. In the next number will appear a more fitting memorial.

REVIEWS, BOOK NOTICES, &c.

INSANITY IN RELATION TO CARDIAC AND AORTIC DISEASE AND PHTHISIS, is the substance of *Goulstonian Lectures* delivered by Wm. Julius Mickle, before the Royal College of Physicians, of London, in March of the present year. Reprinted from the *British Medical Journal* and published by H. K. Lewis, 136 Gower St., N. C., London.

The distinguished author is not unknown to fame. He is the accomplished medical superintendent of Grove Hall Asylum, London, and the author of the most complete, elaborate and the best treatise on General Paralysis of the Insane ever written in the English or any other language, "a man of *mickle might*" in *psychiatry*, is Dr. Wm. Julius Mickle.

The same painstaking detail, careful clinical record, anatomical and pathological history that pervades the author's work on paresis characterizes the little book before us.

All the chapters in this little book are interesting and instructive, but the following chapter on the influence of cardiac disease on mental states and the production of mental symptoms, give the gist of the author's experience and will inspire the reader with a hungry desire to devour the chapter which follows it on *Insanity in Relation to Forms of Cardiac Disease*, and in short, the whole of this interesting work.

"*Influence of Cardiac Disease on Mental State and Production of Mental Symptoms*.—The chief factors of the brain circulation being the heart's action, the vasomotor apparatus of brain, the molecular functional activity of brain, and the atmospheric pressure (opposing return from skull, whose contents are partially withdrawn from its influence), it is evident that cardiac disease may play an important part in modifying that blood supply and the cerebral functions. And the shrewd forecast of the late Sir G. Burrows, as to its frequent connection with insanity, has been justified by actual observation.

"Speaking of the mental disease with which so frequently an accentuation of the aortic sound is allied, Professor Rudolph Arndt said that it often takes origin when degeneration of the heart has followed its overstrain, and here the mental disorder, grounded in a disposition of the affected individual, is to be taken as an expression of general disease rather than as a brain disease, strictly speaking.

"The influence of heart diseases in the production of brain affections is chiefly to bring about functional disorders of the brain, including insanity. Although Dr. R. Law and Dr. Wm. Stokes held that, independently of arterial disease, which Roston connected with white softening of the brain, the latter might be brought about by heart disease, yet I have never seen a case of such 'exsanguineous softening' fairly attributable to cerebral anæmia the effect of cardiac disease; for in all cases where disease of the vessels locally was insufficient to account for the circumscribed softening, I have found embolism, or hemorrhage, exudation, or new growth. But whatever their connection with cardiac or other disease, these several forms

of local gross cerebral lesion may originate mental derangement, chiefly with dementia. An examination of this department of the relations of cardiac to mental disease would occupy too much time, does not fall within the scope of these lectures, and will now be dismissed for good.

“How, then, may cardiac disease either modify the symptoms of pre-existent insanity, or of that which appears about simultaneously with itself; or give origin to the mental disease, play the part of a chief factor of the psychical malady? A question of difficulty and complexity. Combined as they usually are in operation, the several elements may be disentangled in some examples. They are as follows: 1. The heart disease may act by disturbing the balance of the general circulation in various ways and degrees. 2. Similarly, it may act by disordering the intracranial circulation (this includes its effect on the local vasomotor mechanisms). 3. It may operate by leading to a change in the composition of the blood within the cranium; or 4, of the blood generally. 5. It may act by the pulmonary disorder it induces, and the morbid impressions and sensations resulting therefrom, so that eventually some of the effects arising are of pulmonary origin, or partly so. 6. Through the nerves it may become a source of peripheral irritation, and influence cerebral functions reflexly, by sympathy, inhibiting some forms of activity, deranging others.

“Lest the above statement should bear a dogmatic impress, I must add that as yet they are not actually demonstrated and generally accepted facts. Some, indeed, while admitting a change of balance of general or of local circulation in heart disease, changed blood-pressure within the vessels, and altered quality of the blood therein, yet deny any effect, worth mention, of these on the production of mental symptoms, and hold that the original endowment of the nervous system, and the previous mental qualities, govern the state of psychic functions during the existence of heart or renal disease, of changes of pressure and circulation. Nevertheless, as regards the first two of the above-mentioned results of cardiac disease, and factors of mental, the preceding discussion shows their importance in determining the state of the brain, and therefore in producing disorders of it. In relation to this come cases with feeble circulation and with cerebral vessels imperfectly filled, in which the mental state or the sensory brain functions varied with the oscillations of arterial anæmia of the brain, according as the subject was in the erect or in the horizontal position; as where one, feeble-minded, apathetic, and peevish whilst in the erect position, became intelligent, lively, and conversational in the recumbent; or, the student, mentioned by Burrows, who, owing to the defective bulk of blood in the cerebral vessels when sitting up, could study only in the recumbent position; and Witkowski found two patients with aortic stenosis lie abed with head low: whereas other persons with congested head held it stiff and high erect, as in a case of mitral insufficiency with swollen red head, most carefully balanced. Then from the asylum ward come cases in which maniacal excitement is often cleared up, and disquieting delusions abated or dispersed, by moderate doses of digitalis, as shown in my paper on the subject; and I need only mention vertigo and syncope as active cerebral symptoms often connected with defective or disordered encephalic arterial supply.

"Then, as regards the third of the factors enumerated, what has gone before demonstrates that in disordered conditions of its circulation, parts of the brain may be poisoned by venous blood, relatively too venous, and relatively too long stagnating in the veins and sinuses, and dammed backward upon the capillaries. As regards the fourth and fifth of the factors, also, we need only draw attention to the frequent disorder and imperfection of respiration, or even pulmonary disease, secondary to cardiac disease, and the interference with normal hæmatosis thereby engendered, and therefore defective nutrition of the brain, as well as the mental effects of morbid impressions coming from such pulmonary disorder or disease.

"The sixth manner in which heart disease may occasion or modify mental symptoms, is one which has been almost entirely ignored, but which I deem to be of great efficacy. When we consider the painful impressions, the distress, the physical anguish, the extraordinary variety of abnormal sensations, that may arise in cardiac disease, the closely, urgently pressing nature of many of these, the vague discomforts, the oozing away of strength and courage and nerve, the easy access to the brink or depth of syncope; we shall see in all these a fertile field for the growth of depressed or hypochondriacal feeling and ideas of a delusive character. That peripheral local morbid states often directly occasion definite mental symptoms, and even particular delusions, I have had many necroscopic proofs; and, had I space, might relate many cases in illustration of that thesis, and might select abdominal and other cases, in order that what I shall say hereafter about the heart might exhibit conspicuously a parallelism with these other pathological facts; but space fails me. Moreover, this doctrine is of old standing. Thus, the wide employment of 'sympathetic insanity' as a general etiological term, was largely built upon occurrences similar to those long ago spoken of by Brown-Séquard, and others, as insanity by reflex effect of irritation of centripetal nerves.

"One may describe the above methods of action of the graver maladies of the heart; more difficult, nay, often impossible, is it to apportion to each one its place and *role* in particular cases, or in the several forms, of cardiac disease.

"With disabling heart disease, and especially if thereupon pulmonary disease supervenes as a secondary result, or even independently, come a general disturbance of the balance of the circulation, and impeded return of blood to the right side of the heart, including impeded return of blood from the cranial cavity, and all the more so as here comes into play the closed nature of the skull. And not only is the venous blood in the sinuses and large cerebral and meningeal veins brought to a state tending to stagnation, but it also acts backward towards, and upon, the arteries, in this course giving rise to irregular circulation, local retention and blood-stasis, poisoning of the parts with retained effete products of tissue-metabolism, and to changes in the pressure of the blood upon the vascular walls, and in the tension of the brain. Lung disease greatly enhances this condition of the intracranial circulation, a condition which also is accompanied with arterial cerebral anæmia, which we have seen the afore-mentioned changes tend to produce. And this being the state of affairs, should there now be also histological changes in the walls of the cerebral blood-vessels, their

partial occlusion starves the brain substance, their diminished elasticity further aggravates the stasis and promotes gravitation of blood. Of the evil effects of persistent passive congestion of the membranes and brain substance, I need not tarry to speak. Yet the heart disease, in some forms particularly, and eventually in all, of itself directly, often mechanically, occasions a defective arterial supply to the brain, with or without venous congestion, and in the train of this arterial anæmia (and venous congestion) follow all the changes in the circulation and nutrition of the brain to which I have referred, but which I need not recapitulate. And very mistaken are those who in the diseased or healthy state of the brain vessels respectively, would seek the complete solution of the seeming mystery that one case of heart disease is attended by mental symptoms, and one, apparently similar, is free therefrom.

“Notwithstanding the effect of emotions on the heart, and the frequent effect of heart disease on the spirits of the sufferer, and that some have attributed mental symptoms, and even the production of insanity, to chronic heart disease, yet others have denied the existence of any such influence by cardiac affections, or, if not denying it, have minimised its importance and effect, holding, rather, that when they co-exist, the heart disease is secondary to the mental. And of those who do admit that influence, nearly all have described the clinical results in brief and general terms, as applying to chronic heart disease, in a wide sense, have failed therefore to distinguish the mental effects flowing from its different forms. Thus, Solfanelli opined that while hypertrophy affecting the left side of the heart is connected with more active, and valvular disease with more passive, hyperæmia, and its results; and while cerebral anæmia will arise from aortic-valve stenosis, and cerebral venous congestion and œdema will follow upon mitral regurgitation, yet, a correspondence fails to be observed between the variety of heart disease and the form of insanity found accompanying it; and most of those who have brought forward large statistics on heart disease in the insane, have drawn the clinical facts from one set of cases, the necroscopical from another set, and the latter from records entirely or largely made by others.

“Of insanity where heart disease is the chief factor it has been said that hypertrophy of heart goes with exalted conditions, dilatation with depression; or, again, that aortic-valve affections mostly occasion excitation, whereas, on the contrary, mitral affections lead to melancholia chiefly; while states of excitement are often attended by temporary murmurs originating at the aortic valve. Yet most or all of the existing statements on this particular relation of heart disease to insanity are vague, general, indiscriminate, insecurely based.

“The clinical and pathological sketches to follow are entirely from cases under my care, and many of them so for years, and of which I made both notes and necropsies. A few other cases are utilized, of persons who are living, or did not die under my care, or on whom a necropsy was not made. Thus, the clinical and the pathological facts are drawn from the same cases and by the same observer.

“Acute affections of the heart may be the source of mental disorder, as the insanity observed in some cases of rheumatic endocarditis by Burrows

and others, or as in cases of ulcerative endocarditis in the childbed state, causing derangement taking the form of puerperal mania. But I am about to speak of something other than the delirium or other mental symptoms occasionally observed in the acute and febrile affections of the heart—of something other than its functional affections, or even than its milder organic changes; for not only is it more difficult to trace the effects (if any) of functional disorder or mild organic disease on the mental state, and not only are these producible by many causes, and easily engendered by the mental disturbance itself, and by states such as lithæmia and renal inadequacy—thus rendering them less suitable for our purpose—but also in omitting them there are two further advantages; the one, an avoidance of being overloaded by a throng of cases of little use for our present purpose; the other, that by selecting only the severe cases of organic disease the necropsy is conclusive as to the cardiac condition, and therefore we can be spared that recital of the physical signs and somatic symptoms of the heart affections which would become almost necessary in dealing with functional cases and mild organic ones. And still another reason is that it is not part of my scheme to furnish a new and ostensibly complete set of statistics as to the proportions, per cent., of the several forms of insanity affected with this or that cardiac condition or lesion—a matter of secondary interest from our point of view.

“Continually do we find mental symptoms cropping up in heart cases. For example, Dr. Bristowe’s article on ‘Recurrent Palpitation of Extreme Rapidity in Persons otherwise Apparently Healthy,’ we find that even in some of these cases of purely functional affection with only incidentally present cardiac disease, or slight dilatation and hypertrophy secondary to the palpitation, he noticed an irritable, fidgety condition, and sense of being always in a hurry, or a feeling of being ill, faint, and weary, coincidently with the paroxysm of palpitation.

“To illustrate the effect of heart disease on the mental state I need not confine attention to the insane. Their attendants and others occasionally furnish me with effective examples. One such will be mentioned under aortic regurgitation. A second case was that of one disabled elsewhere for attendant’s work by a heart crippled by rheumatic fever, and to whom I gave the situation of porter. In his chest were always to be heard loud, churning, commingled murmurs, which sometimes became worse, the pulse, ordinarily above 100, running to a great frequency then; asthma-like attacks of dyspnoea being severe, the congestion and œdema of lungs adding to the distress; the face becoming blue and livid, and the lips more everted. Now at these times I noticed a concomitant mental change imprinting itself on the man’s visage, but chiefly manifesting itself by suspiciousness and a substitution of the usual cheerful, lively buoyancy by moroseness, withdrawal of self, and a mental attitude as of one standing on defence against unjust reflections upon, unjust feeling toward himself—an incipient morbid idea of the hostility of those around him, and the misinterpretation of their actions and motives, ending occasionally in his bringing to me some suspicious suggestion rather than definite accusation—suggestion which I was wont to ignore. Finally, the kidney becoming affected, he died albuminuric, but a few days before death confessed to

me that, when in his 'bad turns,' he for years had had visual hallucinations or illusions, and that, as in dyspnœal lividity he spoke to me, he could see a man and dog at the foot of his bed (hallucination).

"Still another attendant became changed in disposition and feeling, but was unaware of his heart disease until, on examination, I found left hypertrophy and double aortic *bruit*.

"Nor can I forget the case of a medical friend with heart disease chiefly of the aortic valve, so far as valvular, and a *bruit* in the aortic arch; whose life became overcast by restless anxiety. Oppressed by apprehensions and vague disquietude, and with his thoughts ever returning to revolve around his morbid sensations and vague mental and physical discomforts, his conversation kept recurring to his sensations, his disease, and his impending death, the constant themes with which by day and night he worried those around him. Mirth or pleasantry grated upon his feelings, circling around their somber center. Fidgety, restless, perturbed, anxious—a hundred times a day he would beg of me to feel his pulse, or seek the expression of my opinion on his state; and in the night, when sleep failed, he would rouse one up in order to seek suggestion of some new, soporific plan, to be relieved of his dread, and to have his pulse again felt.

"And here I may mention the case of a deteriorated imbecile monomaniac, not in the following statistics, who, after several rheumatic attacks leaving damage of the mitral valve and of the lunate cusps of the pulmonary artery, had vast increase of what had previously been only a slight tendency to occasional, sudden, quasi-impulsive, transitory outbursts of excitement, violence, and destructiveness."

The second lecture on aortic valve lesions and their relation to insanity, as well as the subsequent and closing one on insanity in relation to phthisis, will enlist the earnest attention of every student of clinical psychiatry. The subjects treated of by Dr. Mickle in these lectures have occupied the thought of alienists more than any other subject in psychiatry, except, perhaps, the pathology of mental disease and its classification and definition, and are always of special interest to the neurological clinician.

DIE BEZIEHUNG ZWISCHEN GEISTESSTORUNG UND VERBRECHEN. Von Dr. W. Sander, Oberarzt, und Dr. A. Richter, Assistentarzt, von der Irrenanstalt, Dalldorf. Berlin, Germany, A. Hirschwald, 1886.

"*The relation between insanity and crime*" is of late much discussed in the Anglo-Saxon countries, but purely from a forensic stand-point. Dr. Howard, of Montreal, Dr. Nicholson, Dr. Maudsley, and other Englishmen, Drs. Jewell, Spitzka, Hammond, C. K. Mills, C. F. Macdonald, Godding and others, in the United States, have made attempts at the study of crime and insanity from the anthropological stand-point. Benedikt's work, albeit neither original in its contents nor judicial in its manner of stating its facts, has acted as a decided stimulus to the study of criminal psychiatry. The present work shows that the physical phenomena presented by the congenital habitual criminal are the same in character as those presented by the paranoiacs, periodical lunatics, and other victims of the psychoses of degeneracy. Long ago, in a review of Benedikt's book (*Chicago Medical Review*, p. 311, July 5, 1881) it was said: "Anyone who has at all examined this question, will be convinced that between the true

criminal type, imbecile and the case of paranoia (primar verrucktheit), the psychological relations and their anatomical bases are intimate and close. Had Dr. Benedikt examined the brains of criminals and the insane, not for convolitional aberrations alone, but for conditions like heteropia, etc., he would never have stated that between the criminal and the paranoiac there is nothing in common." And this opinion is borne out by the present researches. Original imbeciles and paranoiacs are frequently found among Drs. Sander's and Richter's patients; teratological defects were common, and the psychical symptoms were such as would be found in patients varying in mentality from imbecility to paranoia, or, as the chaplain of the Joliet penitentiary puts it, from the "fool to the crank." This last gentleman's remark is cited because it illustrates very clearly that among the population of a penitentiary are found many unrecognized insane. Nor is it surprising. Dr. C. F. Macdonald, of the Auburn Criminal Lunatic Hospital, has "been struck with the frequency of cases in which expressed delusions were absent, although the manner and conduct of the individual clearly indicated a delusional state. Comparing these individuals with their former selves there are found clear evidences of a departure from their normal mental state. They become sullen, morose and morbidly irritable. They rebel against the ordinary rules of discipline, and make unprovoked assaults upon those around them, without apparent motive and without offering any explanation therefor. Their suffering from impaired bodily functions is shown by sleeplessness, loss of appetite, coated tongue, foul breath, constipation, a 'greasy' condition of the skin, and a livid, puffy appearance of the extremities, indicating a relaxed state of the blood-vessels. They are generally coherent in conversation, do not complain of being ill, nor apply for medical treatment. They frequently continue in the performance of their allotted tasks in prison for months before the attention of those in daily contact with them is attracted to their mental disturbance. From this condition they either recover or gradually drift downward to complete dementia, with no outward exhibition of mental excitement to mark the course of disease. A certain proportion of cases, usually those of hardened criminals, are characterized in their mental manifestations, by the most pronounced vicious tendencies, their insanity apparently expressing itself in a marked *exaggeration of the depravity and vice* displayed by them prior to the onset of their disease. On the mental side this is *substantially* the only evidence of disease which these cases present. Physically, however, their condition is more or less marked by the signs of bodily impairment above referred to. Known to the authorities as abandoned and depraved individuals, it is not surprising that their insanity is not recognized by casual observers, when it occurs." It has been well said that insanity consists in the removal of inhibition, and there is no alienist who will deny that he has seen cases of insanity in non-criminals corresponding to those just described by Dr. Macdonald. The anatomical basis of congenital moral insanity (or imbecility, as it is most properly termed), must, *a priori*, be in essence the same as congenital crime, since the psychical manifestations are essentially the same. Dr. Jewell has said: "But it is to cases where the moral sense is defective that the term moral insanity most properly applies." Says Dr. Bannister of the Kanka-

kee Hospital for the Insane: "Whether we consider this moral sense as a primary feeling, as seems probable for many reasons, or as a derivative one composed of still more elementary feelings, or as a necessary sequent of some other state, it does not alter the case as regards the present question of moral insanity. By this term we mean a disease of the brain affecting alone its functions as the organ of the moral nature, disordering the capacity to receive moral impressions, and the ability to control conduct for moral ends. This includes the so-called impulsive insanity, as well as that form in which moral impressibility is diseased." Todi says: "Moral insanity is shown in an innate tendency to evil; in egotistical, cynical, and cruel manifestations in childhood. On these congenital anomalies are often engrafted impulsive tendencies in later life." Gauster says: "Esquirol, Gratman, Prichard, Morel, Solbrig, Maudsley, and others have called attention to a certain class of psychic degenerations, ranged by Pinel under *manie raisonnée*, and by Prichard under moral insanity. As was pointed out by Morel, these conditions are not always congenital. These mental states have been classified as affective monomania, or as insanity affecting the feelings and the will. The patients are often morally perverted from their infancy. They are headstrong, malicious, disobedient, irascible to a very high degree, lying and neglectful. They frequently manifest a tendency to violence and brutality. In adults there is often found a great tendency to mechanical pursuits. They often speak and act in a seemingly sensible manner, and are regarded as of sound mind. They delight in intrigue and mischief and sometimes indulge in sudden sexual and alcoholic excesses. They are extremely passionate and excitable, and attribute their excesses and passion to others, whom they treat badly. They pass themselves off as heroes and martyrs." It is not astonishing, therefore, that Drs. Sander and Richter should find, that among insane criminals facial and cranial asymmetries, convolutional aberrations, and heterotropic conditions are frequent; that there are malformations of the sexual and other organs. These researches furnish an anthropological basis for the opinions expressed by all thinking alienists and penologists, that the congenital criminal, like the lunatic, is a victim of his organization. One of the questions raised in the present volume is that of criminal insane hospitals. With the fact shown by Dr. Bourneville, that many cases of perversity of instinct can be modified by proper psychiatric treatment, and the good results of Dr. C. F. Macdonald's management of the Criminal Lunatic Hospital, he has shown that insane criminals can be trusted on parole to farmers in the vicinity of the hospital, and can be treated without recourse to restraint; in mind, one can scarcely help agreeing with Dr. Sander that distinct criminal hospitals are not necessary, more especially when it is remembered that the delicately-bred puerperally insane lady is the most foul-mouthed of patients, and the hebephreniac and paranoiac scion of an old family is often the equal of an insane criminal in rascality. Segregated hospitals furnish sufficient requirements for the temporary exigencies arising in the treatment of insane criminals. As an attempt to place crime and insanity in their true relation, the present work deserves praise. It is well issued.—J. G. KIERNAN *Neurological Review*.

THE APPLIED ANATOMY OF THE NERVOUS SYSTEM. By Ambrose L. Ranney, A. M., M. D., Professor of Anatomy and Physiology in the New York Post-Graduate School and Hospital, etc., etc.

This is a second and revised edition of a valuable practical study of the nervous system with special reference to utility in diagnosis, which has hitherto received favorable notice in these pages. We take pleasure in commending anew this improved second edition to the many readers of the *ALIENIST AND NEUROLOGIST*.

The author has enhanced the field of usefulness of this book by the alterations made in the text of the first edition. "The section on the brain has been entirely rewritten, in order that the latest discoveries in the anatomy and physiology of that organ should be comprised within its pages. The sections on the cranial nerves and the spinal cord have also been enlarged, and so altered as to make them more comprehensive in their scope. Some cuts of the former edition have been discarded, and better ones selected as substitutes. Many new diagrams have been designed by the author to illustrate the text." The author has sounder views on tendon reflex as a symptom than some other writers.

NOUVEAU PROCÉDÉ POUR GUÉRIR LES RETRECISSEMENTS DE L'URETHRE RAPIDEMENT ET SANS AUCUN DANGER. Par J. A. Fort, Ex-Interne des Hôpitaux de Paris, Ancien Professeur Libre d'Anatomie à l'École Pratique de la Faculté, Etc.

The author in this *brochure* clearly demonstrates the danger of urethrotomy and rapid dilatation of the urethra for stricture, and shows plainly the superiority of electrolysis.

THE PERSONAL EQUATION: A SUGGESTION CONCERNING DIAGNOSIS BY AUSCULTATION. By Robert Barclay, A. M., M. D.

This is a thoughtful diagnostic brief of nine pages, by a rising etiologist of St. Louis, which we have read with pleasure and profit. The author has our thanks for it.

LUNACY IN MANY LANDS.—This is a large volume of 1564 page, by Dr. G. A. Tucker, of Sydney, New South Wales, descriptive of his visit and inspection of most of the asylums of the world. The book contains detail evidence compactly collected of the practical working of a larger number of asylums of the insane than any book extant, and will prove a useful book of reference to asylum physicians and statisticians. Something similar is shown in the work done by Dr. Norton Manning, of New South Wales, in 1868, and by Dr. Wilkins, of California, in 1871, but nothing so elaborate. These two works are more compact and have distinctive features.

The author's conclusions are in the main though not altogether in accord with advanced opinion among alienists of this country on the subject of the management of the insane and the treatment of insanity. The author must have been misinformed in the statement he makes that "the great criminal asylums of England and America use no mechanical restraint whatever."

The following conclusions, which are excerpts from the book, will interest the reader; some are wise and some are otherwise:

"1. The right of the insane to be treated, at least as nearly as possible, like other human beings, should be insisted on, for it must be borne

in mind that the numerous forms of mechanical restraint, enforced baths of all kinds, and the variety of other irritating, vexatious, and unnecessary restrictions are proved to be injurious, and are shown to be the outcome of each Superintendent's own whim and fancy—in many instances to save trouble, and in others the result of ignorance. Insanity is much the same in its features in all parts of the world, and therefore if a large proportion of Superintendents can conduct their institutions without restraint with positive benefit to all concerned, no argument is left in its favor. As a rule, where restraint is most used, it will be found that the management is the most defective, and disorder reigns throughout.

"2. The great criminal Asylums of England and America use no mechanical restraint of any kind.(?) It is recognized that employment, pleasant surroundings, amusements, and greater liberty of action are the leading principles to be adopted in the treatment of the insane. The patient on admission, no matter how violent, should be treated as a sick person, and be placed in bed unrestrained in any way, the prone position allaying the excitement. Modern hospital treatment, with its quiet and soothing influence, is found of the greatest benefit. The regular and constant visitation of friends and the general public have a beneficial effect,(?) and should supersede the close Asylum isolation usual.

"3. That at least one lady medical officer should be employed in the female wards of every Asylum, and a female nurse in each male ward.

"4. That at present thousands of female patients are confined, and many live and die in those institutions who receive no medical treatment (for obvious reasons), where young medical men are alone charged with their care. That their diseases, if recognized, are only imperfectly, or perhaps never treated, whereas a person of their own sex would be able at all times to render them that relief and attention so much needed in the treatment of diseases producing insanity, to which women are subject. Hereditary predisposition and the excessive use of intoxicants appear to be the most prominent causes of insanity.

"5. And opinions point to the fact that the form of insanity has undergone a marked change during the last few years, that the maniacal form is less frequent, and that melancholia has increased.(?)

"6 That general paralysis has increased in both sexes, and very much so in women, that this disease is found more particularly in large centers of population where excesses of all kinds are indulged.

"7. That insanity is largely on the increase in every country is certain by the new additions being made to present buildings, and the large number of new Asylums constantly demanded as necessary to meet the requirements.

"8. General opinion shows the advisability of small Asylums, not to exceed 300 patients, as giving better results; and these to be provided with a much larger medical staff than at present, to be occupied only with the medical duties and in the necessary research calculated to obtain a knowledge of the disease they profess to cure.(?)

"9. The following information is compiled from Asylums forming this report, the balance in any case computed will be those Asylums from

which answers were not received to the various questions, or the Superintendents of Asylums who have expressed contrary opinions :

There are 187 Asylums with a capacity for more than 400 patients.

There are 199 Asylums under 400.

There are 86 Asylums containing more patients than their capacity.

There are 219 Asylums using mechanical restraints of various kinds.

There are 118 Asylums where no restraint is used.

179 Superintendents have expressed the opinion that Asylums should not contain more than 400 patients, and that a lesser number gives better results.

104 Superintendents who advocate above 400.

151 Superintendents express an opinion that general paralysis is largely increasing.

121 Superintendents express an opinion that the form of insanity has changed of late years.

130 Superintendents express the opinion that insanity has increased above the ratio of the population within their observation.

71 Superintendents say insanity is more curable.

32 Superintendents say insanity is less curable.

"It will be found, on searching the various tables supplied in this work, that Asylums containing over 300 or 400 patients are more expensive in their maintenance than those under that number.

"That large Asylums, called chronic, also become more costly over a given number, contrary to the usual opinion that the congregation of large numbers reduce the per capita cost.

"The returns of cures in Asylums containing above 400 patients are less than in those of a less number of patients.

"I also direct attention to the opinions expressed by the Superintendents respecting the causes of insanity and its treatment.

"It will be seen by the replies of each to the questions asked, how varied they are, and consequently how unreliable they appear when compared side by side."

During this visitation of Lunatic Asylums, occupying three years and a half, the author collected every scrap of information procurable relative to insanity, with numerous plans of buildings, ventilation, and sanitation, with photographs of special interest, which, had he the means, he should have published at his own expense, but Parliament having honored him by ordering his report to be printed, and in deference to opinions expressed as to the expense which would be incurred in the reproduction of these plans, etc., he reduced his report not only by the omission of all these most valuable illustrations, but by more than one-half of the matter collected, which has caused an entire remodeling of the whole work. He is, therefore, not responsible for the absence of elaborate descriptions, but trusts that this condensed matter relative to so large an inquiry may still be found of general use, assistance and interest, although very much regretting the necessity of omitting what may perhaps be considered most valuable information, not only by the general reader but by those acquainted with the care and treatment of the Insane.

The book is published by Charles Potter, Government Printer, Sydney, 1887.

DIOVIBURNIA (*a free ad.*)—We have received a sample bottle of this mixture, the indefinite formula of which is given as follows:

FORMULA.

Fl. Ex. Dioscorea Vilosa.	Fl. Ex. Aletris Farinosa.
“ “ Viburnum Prunifolium.	“ “ Viburnum Opulus.
“ “ Mitchellæ Repens.	“ “ Helonias Dioica.
“ “ Caulophyllum Thalicteroides.	“ “ Scutellaria Laterifolia.
Vin Xerici.	Syrupus et Flavoring.

Aside from the manner in which the English and the Latin languages are promiscuously mixed and murdered in the formula, we should like to know what intelligent physician could intelligently employ this compound, or gain any definite experience after prescribing a mixture whose definite proportions are carefully withheld from scrutiny.

The “Syrupus et Flavoring” might have been put in q. s. adfl. indunciam, etc., if the other ingredients had been given in definite proportion.

The Chemical Company sending out this uncertain mixture gravely informs us on the bottle, that this preparation is being extensively prescribed by *leading* physicians (physicians who prescribe proprietary medicines of doubtful propriety are singularly always leading), and in almost every case with satisfactory results. Results are always satisfactory to the dealer, if enough bottles are sold and paid for.

The medicine is recommended to the profession on account of its soothing and tonic effects. A look at the bottle and in imagination at the cheek of the proprietor, has toned us up to making these remarks, and we feel better in our womb or in the place where the womb might have been already in consequence.

We are also soothed as we look at this bottle and contemplate the possibilities residing in the hidden womb of the future of Medicine, assisted as it is destined to be in its future labors, by so much and such definite proprietary enlightenment. Our gynecological confrères ought to feel extremely happy at the prospect of such happy proprietary assistance. Diioviburnia is especially indicated in dysmenorrhea, uterine colic, threatened abortion, leucorrhea, and in fact in all uterine troubles requiring tonic and anti-spasmodic treatment.

It is a great boon to the profession to have these proprietary advisers and consultants present it, so cheerfully, with bottled wisdom in this shape, and perhaps in our thankfulness for the information they give us with the bottle thrown in, we ought not to be too punctilious about the exact proportion of the several ingredients.

The proportions must be all right, for the amount of information given on the bottle and in the little book accompanying it beats the ordinary patent medicine almanacs, and shows the Dios Chemical Company to be a wise and learned body of medical proprietors.

THE LANGUAGE OF MEDICINE.—This is a manual giving the origin, etymology, pronunciation, and meaning of the technical terms found in

medical literature, by F. R. Campbell, A. M., M. D., professor of *Materia Medica* and *Therapeutics* in the Medical Department of Niagara University, and published by D. Appleton & Co., New York. The author has done a good work for students of medical literature. His book will materially aid those who lack a practical knowledge of the classics.

It is a fit companion to Dr. O. A. Wall's book, the "Prescription," but on a higher and more classical plane. Many omissions are apparent of really expressive terms, and are not discussed in the book, such as *somnambulism* (*somnambulism*), *neuriatry* (the treatment of nervous diseases), *meconophagism* (the opium eating habit), etc., quite familiar to readers of this journal, which might have been profitably discussed by the author, giving at the same time some medical novelty to a book of interest to neurological students.

The author indicates incidentally, in his first chapter, his views on the prevailing pathology of the day. Thus: "our science is still advancing to a higher plane, and the day may come when the comma bacillus, the gonococcus and many other terms will likewise be classed among words marking the delusions of the past." The book would make a poor text-book in medical colleges for senior and post-graduate students.

STAR DUST. By Fannie Isabel Sherrick.—This is a small book of new and strikingly meritorious poems on many subjects which are near the hearts of all. Published by Belford, Clarke & Co., New York, Chicago and San Francisco.

We cordially commend the work of the gifted authoress to all lovers of true poetry.

The author's thoughts are beautiful and often novel, and expressed in smooth, unwearisome meter. The little poem, "Auf Wiedersehen," is worth the price of the book. We hope this worthy work may be so well received as to induce the talented authoress to offer more of her poems in book form to the American public.

Paranoia. A Study of the Evolution of Systematized Delusions of Grandeur. From the Clinical Records of Bloomingdale Asylum, New York. By William Noyes, M. D., Second Assistant in Bloomingdale Asylum, and late Fellow in the Johns Hopkins University.

Moral Insanity. A Plea for More Exact Cerebral Pathology. By James Hendrie Lloyd, A. M., M. D., Instructor in Electro-Therapeutics in the University of Pennsylvania.

Partial Syllabic Lists of the Clinical Morphologies. By Ephraim Cutter, M. D. Harvard and University of Pennsylvania, A. M. Yale, LL. D. Iowa, Hon. F. S. Sc. (London.)

An Experimental Contribution to Intestinal Surgery with Special Reference to the Treatment of Intestinal Obstruction. By Nicholas Senn, M. D., PH. D., of Milwaukee.

Studies from the Biological Laboratory. Editor: H. Newell Martin, M. A., D. Sc., M. D., F. R. S. Associate editor: W. K. Brooks, PH. D.

A New Method in the Treatment of the Vegetable Parasitic Diseases of the Skin. By Henry J. Reynolds, M. D., Chicago, Ills.

Cocaine Dosage and Cocaine Addiction; also, Cocaine Toxæmia. Both by J. B. Mattison, M. D., Brooklyn, N. Y.

Report of the Chairman of the Section on Medical Jurisprudence of the North Carolina Medical Society, May 21, 1886.

Ligation of the Vertebral Arteries for the Relief or Cure of Epilepsy. By J. L. Gray, M. D., Chicago.

On Exercise for Prevention and Cure of Deformities. By A. H. P. Leuf, M. D., Philadelphia.

Malignant Edema and Fat Embolism. By L. Bremer, M. D., St. Louis, Mo.

Heart and Blood-Vessels in the Young. By A. Jacobi, M. D., New York.

The Case of John Daley. By John B. Chapin, M. D., Philadelphia.

The Weaver Case. By Hampton L. Carson, Esq., Philadelphia.

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ORIGINAL CONTRIBUTIONS.

A CASE OF GENERAL PARESIS.

WITH SPECIALLY INTERESTING FEATURES AS TO RAPIDITY
OF COURSE, EXCITING CAUSE AND TESTAMENTARY
CAPACITY.

By C. H. HUGHES, M. D., St. Louis.

AN interesting case of this kind lately came and, through the rapid intervention of death, passed from under the writer's observation. The features of the case which specially claim attention were the suddenness of its access and rapidity of its course; the general or predisposing cause, the predetermining cause, the exciting or precipitating cause, and the occurrence of a brief and marked lucid interval, during which the Holy Sacrament of the Roman Catholic Church was administered and a last will and testament signed, the patient passing into a state of marked hebetude, fever and semi-coma, the next day, followed by profuse perspiration, out of which he came comparatively clear-headed the next morning, and died the following morning at seven o'clock.

The age of the man at the time of his death was forty years. He was American born, married, and by occupation a meat and vegetable dealer. By persistent industry, frugality and temperance he had been quite successful in business

for one of his early opportunities; owning and conducting jointly with another a very respectable and profitable meat and vegetable business in a wealthy quarter of St. Louis. He had, of late years, become a constant reader of the daily papers, retiring late and rising early, and during the last few months preceding his attack he had ignored, to some extent, nature's demands for sleep; five or six hours of slumber being about the average brain-rest he would get out of each day. Inadequate sleep, therefore, as in most other forms of insanity, possibly in his case was one of the predetermining factors of the final brain-failure, though not the chief one, for many sane minds, without morbid predisposition, maintain their healthy equilibrium on this amount of rest.

If we search for a single cause of the mental outbreak in this case we are, as in so many others like it, only rewarded with disappointment. His was the pre-eminently predisposing age for an accession of general paresis, and the sex that in which at least three-fourths of all the cases are found (four fifths, according to Dr. W. J. Mickle, the best authority I think on this subject, though Calmiel found a somewhat less proportion). His occupation and mental habits (though he was not a man of public affairs or a distinguished business or professional character, such as usually becomes its victims) predisposed to the determination of the disease. He was an ambitious head-worker, though only a tradesman, and of sanguine, nervous temperament, quick-tempered, self-willed (though kind and generous) and full-habited. He was a good liver, and in his illness ate more ravenously than ever before, a fact which Workman has noted as characteristic of this form of mental disease (as it is of some other forms of mental derangement accompanied with great brain activity).

Notwithstanding the peculiar features of this case, it is remarkable how many similar characteristics they all possess.

The case was like so many others in having a history of remote syphilitic infection as an antecedent and

probable causative factor, though he had been in the habit for years, of taking with considerable regularity, a quack remedy which is almost a saturated solution of iodide of potassium (with poke root and laudanum probably), which he only left off when under the dominion of his expansive delusions. He was persuaded that he "needed no more medicine, having become the heaven-commissioned healer of all diseases, the divine agent for the remedying of all the personal ills and political wrongs of man, the arbiter of all strikes, the divinely-appointed dispenser of justice and general happiness and prosperity which had come in millennial glory to the world, to be seen and acknowledged of all men when he got to Washington and took the place of President Cleveland."

This case differed from all others which have either personally or in the records come under my notice, in having apparently been *precipitated without any appreciable precursory or incubative stage*, or apoplectic or epileptiform seizures which usher in cases without other precursory premonitions, *and by the sudden cessation of the habitual use of morphia to which the patient had been addicted*. I say *apparently without previous incubative signs precipitated*, which was followed by exaltation instead of the customary depression, this reversion of effect being another proof of the existence of insanity, were such proof needed to establish the diagnosis, for I have no doubt there were the usual, though obscure, inceptive evidences which an expert alienist might have detected, and it is probable that the beginning grandiose or melancholic feeling which usually characterize these cases, led the patient to discontinue his habitual use of the specific treatment, and it may also have caused him to so suddenly stop taking his usual dose of morphine.

His wife told me he suffered intensely when not taking his specific, and his swollen, deformed joints gave evidence of chronic rheumatism which was not purely syphilitic. (If there be such a distinctive disease, which I doubt, the so-called syphilitic rheumatism in my opinion

being, only an abeyant or latent rheumatic tendency brought into active manifestation in syphilis when rheumatism appears conjoined with venereal disease.) The proof of this, in this case, was due to the fact that during his illness, after active specific treatment, and when the patient was under its fullest influence, a sudden storm came, with rapid lowering of temperature and barometer change, and his finger joints swelled perceptibly in a single night and became acutely painful to touch and motion. He took three-fourths of a grain of morphine twice a day, and seemed all right till he suddenly stopped taking this drug when psychical disorder appeared in the most exaggerated form of exalted delusion.

He was so preoccupied with his delusion of grandeur that he told me the first day I saw him, that he had "no pain whatever—he was *well*," though his wife stated that he always suffered when he neglected his medicine. And he must have been in pain had his mind been recipient to painful impressions either from the rheumatism or from the pains of suddenly-abandoned opium.

Another feature of this case less common to general paralysis than to other forms of insanity was its association with hereditary tendencies, one of his brothers having been quite insane, etc.

Now general paresis is the form of insanity which is more seldom hereditary than other forms of mental disease, its ancestral affinities being more generally apoplexia, paralysis and congestion, non-psychical brain affections, the transmitted tendency, as Lunier has stated, being to cerebral congestion.

The patient never complained of headache or nocturnal cranial pain in his best estate, he had never had hypochondriasis, acute mania or acute delirium, there was no anæmia nor cachexia, there were no palsies of individual cranial nerves except what was shown by the gradual dysphagia toward the last, and accelerated heart beats, and failure in breathing. The patient had no apoplexia or epilepsia, or special sense paralysis, or any symptom which,

according to the differentiation laid down by Mickle between syphilitic insanity and general paralysis, unless we choose to accept the marked left hemiplegia as distinctive, which I do not. Indeed, I do not believe there is any essential distinctive difference in many cases, except when the syphilis is active and recent and marked in its effects, we will often find more distinctive and pronounced motor paralysis. It is not every case of general paresis associated with a syphilitic history, as Goldsmith has observed, that is due to syphilis, nor do I believe that any case of general paresis is solely due to syphilis, though the likelihood of this and other forms of insanity appearing under great mental strain, vicious or passionate excess or worry affecting the brain, is made possible in many cases which would otherwise escape the affliction.

And again, physiological tone, like the storm-swept saplings of the forest which right up again after the fury of the wind has spent itself, by the damaging influences upon the brain-texture or cerebral arterial or arteriole system, of constitutional venereal disease, just as the decayed or partly decayed oak which, though towering in apparently resistless strength, goes down before the blast and rises no more.

General paresis falls on man at the most vigorous period of his life, when he is physiologically ripe for greatest endurance and proudest deeds of mental power, at the time when the battle of life is with him the hardest, for it is when he dares and seeks to do the most; when the indomitable will, assured of its strength, and when the mind experience-stored, confident, and trained for conflict, feels no weakness and falters at no undertaking; when the unconquer'd brain and brawny arm that have as yet known nothing of defeat feel strong and invincible; when the storm of life rages the fiercest and when the healthy man's delight is in daring the warring elements. The period of general paralysis is the fighting age of venturesome and victorious struggle, when conflict and

combat are rather more welcome to the mind than rest and that sweet repose for which the old man yearns.

While the old man dreams of rest, ceaseless activity is in the thoughts and dreams, day-time and night-time, of the younger man, whose age fits him for great enterprises and successes or the unfortunate failure and mental collapse of general paresis. Woe to that man when life's whirlwind of ambition and passion and jealous rivalry in life's affairs come, if, by indiscretion in drink, revelry or venery or timely hours of rest and sleep ignored, he has sown the seeds of weakness in the organ which, at this time of life, must bear the brunt of the blast triumphant or break before it in mental shatters. Under such overstrain the old man's exhausted powers entirely fail and give way in dementia, the young man's are perverted into mania, while the strong, middle-aged intellect gives way to fruitless, impracticable, unrealized and unrealizable dreams of magnificent grandeur, absolutely impossible to human power and sometimes apparently impossible to God. Day dreams complacently accepted as realization, all the more possible because they are so magnificently ideal and unanchored to anything possible in the past experiences of human history. *Le delire de grandeur!* aptly termed in this phase of this disease by the countrymen of Calmiel, Bayle and Delaye, who gave the medical world, fifty years ago, its earliest descriptions.

There was a malarial state in this case as shown in the cold surface and the patient's requiring heavy blankets and comforts (though the pulse was always quick), followed by fever and sweating on alternate days. But in this valley of the Mississippi, when the nerve centers are prostrate, how often does evidence of malarial poisoning appear, and how often do we have in the midst of other treatment, to institute an active antimalarial course. This condition was combated in the usual way and much mitigated. Malaria was but an incidental factor, though some would reason according to an acclimatized mental bias, as many do in regard to all diseases occurring in malarial countries, that the malaria

was the cause of the psychical concomitant or sequence appearing. We combated the malarial poisoning only to lift off one of the loads which was bearing down the stricken nerve centers.

For the same reason, though in a different way, we attacked what there might be of specific mischief, and for a similar reason we restored, as soon as we could, the habitual daily dose of morphia, of which the patient in this mental crisis had robbed himself, and the restoration brought benefit to him in bringing back sleep and rest, and in a measure for awhile, mental balance.

There was some failure of bladder power, and though he insisted that there was no water in his bladder, Dr. Coles, who then saw the case with me, drew off several pints of strong-smelling urine. Subsequently his water was daily drawn for a few days, when he afterwards freely passed it himself, though not in such quantities as he said, for one morning on being asked if he had urinated, he said he had that morning passed a million gallons of water. Water was about as small a matter with this patient as it was with another similar patient of mine who proposed to bridge the Northern Lakes for a transcontinental air line railroad. His ideal capacity to make water and the magnitude of his morbid ideation were in perfect accord. To him, as to most minds similarly affected, minimums had no place—quantities and distances were always great.

This patient was first seen by me on the first of May. On the next day, on my certificate conjoined with that of Dr. Coles, he was sent to an asylum, but his wife only let him stay there a few days. I saw him next on the ninth, and daily after that till his death on the morning of the twentieth of May.

An equally remarkable and unusual feature with the sudden onset of this case was the rapidity of its course, but his death was hastened by intercurrent pulmonary congestion.

I have no doubt, from the nature of the predisposing influences in the man's life-habits, as well as from the oral

embarrassment and hesitancy manifest in his speech, conjoined with the characteristic psychical symptomatology, that the case was one of general paresis.

But the chief feature of interest was the remission of all the usual mental symptoms for about ten hours. About the seventeenth day, and again on the nineteenth, a suspension of all active display of his *grandiose ideas*.

This remission on the seventeenth day was treated as a lucid interval by his confessor and by his attorney.

The priest called, and after asking him who Christ was, and why He died, and what the Holy Sacrament meant, and receiving satisfactory answers, gave him the Sacrament.

His attorney wrote out a brief will, conveying all his property to his wife (he had no children), read it to him, received his affirmation under oath of its contents as his last will and testament, and saw him attach his signature to it, and believed he understood the nature and quality of his act, and fully executed such a disposition of his estate as he would have done had he not been afflicted with a mental disease, and his wife thinks that he made the disposition of his property he had always intended, as she jointly with him had earned it.

The only thing apparently unnatural on the face of the transaction is the cutting off without bequest of his aged and dependent mother, though she was at the time living with other sons, who however, are not well fixed with worldly goods. The whole estate did not exceed ten or twelve thousand dollars. It consisted of a homestead, some money in bank and an interest in some teams, and the business carried on jointly with a partner. The will, after being contested in court, was sustained.

Dr. Walter Coles of this city, saw this case and jointly treated it with me, and concurs in the main, in the record and conclusions.

The Mental Characteristics of the Sexes.

✓ By J. T. SEARCY, M. D., Tuscaloosa, Ala.,

President of the Board of Trustees of the Alabama Insane Hospital.

MEN and women are not alike. Such a statement of course does not have reference to the organs or functions of reproduction, for on these differences the classification of the sexes is founded, but the assertion implies that there are other differences—the functions of other organs differ—and these differences, while not as distinguishable as the purely sexual, are nevertheless sufficiently distinct to mark the sexes.

The workings of the muscles and the exhibitions of cerebral action are not alike in the two sexes. These departments of action are probably farthest removed from purely sexual functions; they are those departments usually considered of highest rank, and are those in which the adjustability of the individual to the environment is executed, and are those in which we would suppose men and women would not differ; still, their differences are such that the sexes can be readily distinguished by means of them. Men and women do not have the same methods of thinking, nor do they have the same methods of running or walking. While in these departments of action there are the same general plans of structure and of function, still there are usually sufficient differences to readily render the sexes distinguishable. In those finer distinctions, that we generalize under the head of character, for instance, our ideals of the best types of man and woman are different. A typical manly character differs from a typical womanly character. "Venus de Medici" is not like "Apollo Belvedere" in the statue; and our ideas of Portia are not like those of Julius Cæsar; the Maid of Orleans was not a warrior like Napoleon; nor are Mrs. Heman's writings like Shakespeare's.

Why there should be sexual differences of these kinds is a pertinent question to ask, and many have been the answers given to it.

The explanation most frequently given and the one that has in it much of truth and plausibility, is, such differences have arisen and are maintained by the subjugation of woman by man. Most writers go back, as a cornerstone from which to start, to the statement that woman has constantly been held in servitude, more or less abject, by man, which fact is sufficient reason why she is not as fully or similarly developed in these particulars. The burden of their argument is, that, if allowed in society the same latitude of action as men, by the men, the women would in time develop into human beings with similar brain and muscle capabilities. Their constant servitude is what has kept women back.

Whether the differences between the sexes in their specialties of muscular and mental action are those of superiority or inferiority it is not the object of this paper to assert, but recognizing that there are such sex differences, I think we can find other broader and deeper reasons to assign for them than those mentioned. Nor do I think that the fashionable Darwinian principles "sexual selection, that is, through the contest of rival males," or "natural selection, that is, from success in the general struggle for life"—the "survival of the fittest" principle—will account for sex differences except in a few particulars. Why the males vary more than the females these principles do not fully explain. There are certain subjective causes beneath the influence of these principles

The origin of the sexes is one of the results in the evolution of the methods of reproduction. In studying the animal kingdom, as in everything else, there is a regular gradation in the methods of reproduction, from the simpler to the more complex. And I think if we will study the evolutionary history of reproduction we will find the fundamental causes at work that produce sex-differences, such as I have been describing.

The simplest method of reproduction is by *segmentation*, in which the parent individual merely divides into two or more parts or segments. This was probably the original method; all the others are variations or modifications of it. Another method, probably a step higher, is by *gemmation*, where the second individual is a bud or offshoot from the body of the parent. A third method is by *minute cells*. Many animals low in the scale of life propagate by detachment of minute cells, and all those of the advanced orders of life do.

Omne vivum ex ovo is not strictly true in the sense in which it was first meant, though in a very large proportion of cases microscopically minute cells, ova, begin the new being. The essential part of all genetic cells seems to be a central portion usually called the nucleus, protoplasmic in appearance, which has the property, or is specialized to reperform or repeat the *modes of action* of its ancestry. Such a repetition is a simple process in low forms of life, but it is a long and complex chapter in high life. Soon after detachment, the protoplasmic nucleus begins the repetition of ancestral life. Starting from the bottom of the ladder as protoplasm it quickly begins to repeat in more or less accurate detail all the morphological and physiological evolutionary acts of its ancestry, in the assumption of parts, organs and functions. Those early chapters of evolutionary history that have been repeated over and over again millions of times, the genetic cell of an animal of a high order will condense into a few weeks or months of embryonic and foetal life; those modes of action of more recent acquisition, it repeats more slowly.

Gestation, or the function some animals have acquired of carrying within the body of the parent, for a longer or a shorter period, their genetic cells, until they reach a degree of development or growth sufficient for them to maintain a separate existence, was a very valuable acquisition in evolutionary life. It led to more successful modes of living, more advanced races—was an advantageous acquisition in race progress.

Many forms of animals, some of them not so very low in the scale, gestate *singly* their own genetic cells. Such animals Seibold a number of years ago designated *partheno-genetic*, from *parthenos*, a virgin. The offspring of such animals arise from single genetic cells. Another step higher in animal evolution was the assumption by certain individuals of the faculty of *not gestating* their own genetic cells, but of turning them over to others to gestate for them in combination with their cells. The offspring of such animals arise from combined cells. In this way were evolved the sexes. The original, antedating habit was probably partheno-genetic and partheno-gestation probably antedated sexed gestation. Single-cell-genesis antedated combined-cell-genesis.

The female of sexed races therefore more nearly represents the original type, and the male is a modification or variation from it.

Partheno-gestation was an advantageous step and led to to more rapid advance than gemmation and segmentation.

In those races of animals where gestation is a very lengthy process, so far as race progress is concerned, it is very evident sexed-gestation was another advantageous step, very advantageous compared with partheno-gestation.

The males, having acquired the faculty of not gestating their own genetic cells, are not limited and confined by the weight of gestation or by the maternal care of the young, consequent to it. In those races, the human species for instance, where gestation is a very lengthy and weighty process, and infancy a tedious one, as well as childhood, requiring constant and long-continued effort on the part of the mother, the female is very much restrained in her actions by such functions. We can readily see how the male in such races, possessing the faculty of not gestating his own genetic-cells, being at greater liberty than the female, and thereby meeting a more varied environment, gains new modifications faster than she does.

The combined cell of sexed animals, the offspring, the second generation, is the result of the modes of action of two parental lines, and in this way has an advantage over any partheno-genetic offspring. It receives its heritage from two sources instead of one, and is thereby doubly liable to receive the advantages of new modifications. The offspring has an additional advantage also in decidedly sexed animals. It has one of its parents more at large than the other, in more frequent conflict with new surroundings, and more frequently a transmitter of new acquisitions. The successful modifications of the male parent are more frequent than those of the female because of his larger experience. Adjustments to new experiences are more frequent with him than with her, hence race progress with sexed animals is a more rapid process than with partheno-genetic. The highly advanced animals we witness are all sexed, and we may readily see how they have reached their prominence by being sexed.

The evolution of the sexes and of the sexed races, studied in this light, gives us the proper or the more fundamental key to the explanation of the differences between the sexes.

We readily see now how the male all through the animal kingdom is the more varied member. Naturalists have long noticed the greater frequency of male variations compared with female. In allied species of animals the males are, as a rule, more unlike than the females. The females among birds and insects of allied species are often very much alike, while the males are very different.

New organs of battle, horns, spurs, tusks; new varieties of color and new growths of hair and feathers; new notes of voice, musical, calling and challenging are, as a rule, first acquired by the male animals. The young of all animals are more like the females than the males. Young males are like young females, and more like adult females than adult males. When the young males begin to put on their sexuality, they take up the variations of the race and become unlike females.

These facts, which could be abundantly illustrated, all point to the generalization of the statement that the male is the more variable; and to my mind, there is no better explanation than it is because he has acquired the habit of non-gestation. Sexuality is a grand natural "division of labor," and was a highly advantageous acquisition.

In those lines or departments of action in which the race of animals is progressing or modifying, we most generally find the male to lead and the female to follow. From all this we may then generalize the statement that the female is the more stable, fixed and conservative of the two, a more true representative of original race characteristics; the male is a representative of the recent variations of the race. The one in her habits of action is more conservative; the other is more alterative and progressive.

With such an understanding of the evolutionary origin of the sexes, and of the evolutionary growth and acquisition of sex characteristics common to all the animal kingdom, we can much more advantageously approach the subject of the sexual differences between men and women in the human race.

Cerebral development and cerebral functions are the specialty of the human species. In the muscular system and in the functions of other organs man is very much like other animals—is not superior to many of them. The department of mental acquisitions, on the other hand, is the direction in which he has far outstripped the others. I think it can be shown that in this department also, the same general rule holds true, the male leads, the female follows; the male is variable and progressive, the female typical and conservative.

Herbert Spencer says, "Women are less modifiable than men." Again he says, "The relative conservatism of women, their greater adhesion to established ideas and practices, is manifest in many civilized and semi-civilized societies." Another writer says, "Man's characteristic is to make new adjustments and to modify old ones." Says

Van de Warker, "Mentally she is the plastic material which takes its form from the protean phases of life around her. She is spiritually the resultant of her moral atmosphere." Romanes says, "The inferiority (of woman) displays itself in a comparative absence of originality;" again he says, "For it is a matter of ordinary comment that in no one department of creative thought can women be said to have at all approached men." Women seldom make inventions or discoveries. Established customs, rules, habits, usages of society, women are more inclined than men to hold to and observe. They are more influenced by public opinion, and by rules of decorum and propriety. For this reason woman is more moral than man. "Propensity to crime defined by actual commission is four times as great in man as in woman," says Van de Warker. He deduced this statement from criminal statistics. Says he again, "Woman wields a sort of moral inhibitory power. * * * The moral influence of woman upon society is powerful, but it is negative rather than positive."

Woman is more ready than man to accept rules of conduct because they are the established customs of society. Custom and fashion are her objects of study, not to modify them, but to adopt, observe and teach them. Public opinion and the sentiments of others environ her and she assumes her character from them as she finds them. She does not reason to vary; a woman's argument is, "It is so because it is so." Says Lecky, "They very rarely love *truth*, though they are passionately fond of what they call *the truth*." This means woman does not study truth in the abstract, as an object to be sought with a purpose, if necessary, of modifying existing opinions into new ideas, but she speaks of "the truth" as an entity already fixed, to be studied as a matter of fact. Her idea of right conduct is the observance of the rules already established. Hence she is more moral, more religious than man. Conservatism in many particulars is an excellent trait: in her conservatism woman is better than man. She does not

try to change as much as he. She is very much more ready to take advice than man, and makes the opinions of others more largely her rule of conduct. She does not study to modify the methods of work or duty assigned to her; she follows the instructions more faithfully; she more generally studies to please; she cooks, dresses or labors to please others' tastes; she has more tact and aptitude in learning and in observing the niceties of politeness and decorum; she "behaves," therefore, better, as a rule. In their sexual relations towards each other man is the aggressive, woman the passive party; man the courting, woman the courted; man the seducing, woman the seduced.

Woman is more intolerant of wrong conduct in others and has no patience, particularly with her own sex, in failures "to do right." Because of her shaping her judgments from the opinions of others, in one case she will be an excessively austere judge, in another, a too sympathetic one.

Erring young women are spoken of as "giddy-headed," meaning they have proved weak in their consistency to rule. Erring young men are spoken of as "fool-hardy," meaning they have proved faulty in judgment. Man is supposed to reason out his rules of conduct; woman is supposed to accept hers already made. Excellence on the woman's part therefore means excellent observance. Good judgment with her means capacity in compiling and selecting and observing. On man's part good judgment means capacity in his variations. Her sins are those of omission; his sins are those of commission. There is more malice-aforethought in his viciousness than in hers.

From the natural, the scientific, the evolutionary standpoint, it is very evident that woman holds her peculiarities from other than conventional or social reasons. Her characteristics are more fundamental than to be the result of human society alone. She holds them under the same general plan as females of other sexed animals.

The truth is, she is the typical member, while man is the variable. Writers, in considering sex differences usually start out with the assumption that man is the typical member. They even call woman an incomplete and undeveloped man, and reasoning from man as the type of the race they attempt to account for the peculiarities of woman as variations from his standard. On the other hand, reasoning from abundant analogies throughout all Biology and Zoology the very opposite is the case—man is the variation and woman is the type.

Whatever vocation woman may take as a means of making a living, and no matter how much liberty of choice and latitude of action is allowed her, these fundamental principles will always prevail; she will be a woman still. Race continuance and race progress will have to be worked out along the channels of previous action, so that she will have to continue in her maternal sphere. There is no way of daughters being born but of a woman, and female traits are matters of hereditary descent.

In pursuing the so-called men's vocations,—and they are called and are naturally more men's than women's, because they are aggressive and competitive,—in some lines or some departments of them womanly ways of thought and action may prove very efficient; for instance, any pursuit in which there is routine work requiring deftness, docility and constancy, the woman will be very expert. In medicine she will be a routinist and empirical, her writings and teachings will probably be excellent as compilations and expositions of current literature. In law she will not succeed in the competitive field, though her opinions may be excellent as exhibitions of rule and precedent, not as generalizations containing new ideas or thoughts. In the pulpit she is sure to be religiously orthodox. Study of past history and of present conditions of society all tend to confirm the statement that among men, as among all other animal species, race progress is principally worked out by the males.

Another observation I believe will bear ready proof; that it is well, as a race characteristic, to see the sex-differences well marked. The men should be manly, the women should be womanly. I have but to use the terms to be understood, and in the understanding of them is what I have been describing. Womanly means conservation, constancy, devotion, dutifulness, intuitive reasoning. Manly means aggressiveness, progressiveness, modifiability, argumentative reasoning. By reason of habits founded on the human method of reproduction, the one is more fixed, hence less adventurous, the other more at large, hence more adventurous. Excellency of judgment on the part of one leads to hesitancy in taking risks, conservatism; we sometimes call it timidity or fear. Excellency of judgment on the part of the other leads to successful adventures, well-planned changes; hence race and society progress. To learn the past history of a race study the women; to learn its future prospects, study the men. If the race is advancing you will see exhibited in the women firmness and constancy of conduct, fidelity to the standard of conduct already achieved. In the men you will see these same traits, with additions of excellent variability—they are progressive. A highly evolved, highly civilized race has excellences of this kind, and when the race is at its best—most progressive—these sex differences will be most marked, most decided. When the race declines, becomes non-progressive, the men become effeminate,—the men and women together less true and constant to race acquisitions and traits. “They forget the traditions of their fathers.” Degeneracy means this in the individual and in the race. The men degenerate first and draw the women and children after them.

Perversion of the Sexual Instinct.— Report of Cases *

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By PROF. VON KRAFF-EBING.

AMONG the most puzzling phenomena of nature is what is termed by Westphal "*contrare sexual-empfindung*," or the sexual predilections of an individual for those of his or her own sex, with an aversion for sexual intimacy with those of the opposite sex. In addition to the scientific interest which this strange freak of nature excites there are connected with it wide-reaching social and legal questions concerning the light in which those thus affected should be regarded in relation to their sexual conduct and actions. In order to answer these questions aright, questions which experience shows are constantly recurring and which have heretofore received very unsatisfactory solutions in their legal bearing, it is necessary to give to the clinical conditions and appearances of this peculiar phase of disordered nature the most searching study and rigid investigation.

In former years I considered *contrare sexual-empfindung* as a result of neuro-psychical degeneration, and I believe that this view is warranted by more recent investigations. As we study into the abnormal and diseased conditions from which this malady results, the ideas of horror and criminality connected with it disappear and there arises in our minds the sense of duty to investigate what at first sight seems so repulsive, and to distinguish, if may be, between a perversion of natural instincts which is the result of

* Translated by H. M. Jewett.

disease and the criminal offences of a perverted mind against the laws of morality and social decency. By so doing the investigations of science will become the means of rescuing the honor and re-establishing the social position of many an unfortunate whom unthinking prejudice and ignorance would class among depraved criminals. It would not be the first time in which science has rendered a service to justice and to society by teaching that what seem to be immoral conditions and actions are but the results of disease.

The scientific material for the study of this question has heretofore been so meager that the following cases may not be unwelcome to the profession:

CASE I. Mr. X., merchant, residing at the time in America, 38 years old, said to be of a family sound in mind and body, affected since youth with neurasthenic complaints, otherwise sound. Wrote me in the fall of 1882 a long letter, the most important parts of which are here transcribed:

"I have read your article in the *Zeitschrift für Psychiatrie*. By it I and thousands of others are rehabilitated in the eyes of every thinking and half-way fair-minded man, and I give you my heartiest thanks therefor. You will know how cases like mine are derided, execrated and persecuted. I well understand that science has taken hold of this matter so recently that in the eyes of one whose mind is sound and who is unversed in the nature of this disease, it appears as a horrible and unnatural crime. Ulrich has not overestimated the prevalence of this disease. In my own city (13,000 inhabitants) I personally know of fourteen cases, and in a city of 60,000 people I know of eighty.

"I will take the liberty of encroaching on your time by giving a short sketch of my life, and shall do so with all frankness. It will perhaps furnish you with data for your critical studies of this malady. You may make such use of these statements as you see fit so long as my name is suppressed.

"Music and literature were always my hobbies. My whole disposition is feminine. I hate all noise, disturbance and obscenity. As a child I associated constantly with girls and played with their dolls and toy kitchens. I liked to dress in girl's clothes and so earned the nickname of "girl-lover" (*maedchen-schmecker*). Afterwards, when I became a student and took part in turning and gymnastics, it was still my delight to help my mother in her household duties. At the age of thirteen I arrived at puberty, that is, I acquired a fondness for another being, but it was for one of my own sex. At school I always had my lover and was horribly jealous of any young girl or school-mate toward whom he showed any preference. My delight was to kiss him, while my sense of propriety overcame my sexual desires, though to gratify them was the very goal of my wishes. You will be surprised to learn that until I was twenty-eight years of age I never had a seminal emission, either through involuntary emissions, onanism, or by performing the sexual act with a man.

"While still a young man I had a serious love affair with a sophomore. He returned my love in a way, but only with the enthusiastic friendship of a boy. Once when we happened to be sleeping together and my member became sexually excited, he naively asked me if I took him for a girl? I ventured only to kiss him and he returned my kisses. In the manner of youths we raved over poetry and literature. Our parting was for me almost heart-breaking. The young ladies in the house of my master where I lived had no effect upon me. I associated with them in a friendly but entirely dispassionate manner.

"New, but entirely Platonic love affairs with young men followed, but although the outward appearances were most agreeable, there often came over me the depressing thought—you are not like other men—and this troubled me most when I was in a circle of laughing, joking comrades, who were full of animal spirits and sometimes

indulged in licentious pleasures. I did not know whether I should laugh or cry. It was an almost unbearable condition, and I was forced constantly to throw sand in the eyes of others and to act contrary to my inclinations. I was out of this dilemma only when in the society of those like myself: it was therefore necessary for me to seek the society of those whom it would have been more advisable for me to have avoided. I never found in the society of beautiful women that invigoration of the mental powers which is commonly the case, but did find it among fascinating young men. I prefer to associate with married women or entirely innocent and ingenuous young ladies. Every attempt to draw me into the matrimonial net disgusts me and on the question of marriage I am sensitive to a ridiculous degree.

“Until I was twenty-eight years old I had no suspicion that there were others constituted like myself. One evening in the castle garden at X—, where, as I subsequently found, those constituted like myself were accustomed to seek and find each other, I met a man who powerfully excited my sexual feelings, so much so that I had a seminal emission. With that I lost my better manhood and came often to the park and sought similar places in other cities.

“You will readily conceive that with the knowledge thus acquired there came a sort of comfort—the satisfaction of association and the sense of no longer being alone and singular. The oppressive thought, that I was not as others were, left me. The love affairs which now followed gave my life a certain zest which I had never known before. But I was only hurrying to my fate. I had formed an intimate acquaintance with a young man. He was eccentric, romantic and frivolous in the extreme and without means. He obtained complete control over me and held me as if I were his legal wife. I was obliged to take him into business. Scenes of jealousy which are scarcely conceivable took place in my house. He repeatedly made attempts at suicide with poison and it was

with difficulty that I saved his life. I suffered terribly by reason of his jealousy, tyranny, obstinacy and brutality. When jealous he would beat me and threaten to betray my secret to the authorities. I was kept in constant suspense lest he should do so. Again and again I was obliged to rid my house of this openly insane lover by making large pecuniary sacrifices. His passion for me and his shameless avarice drove him back to me. I was often in utter despair and yet could confide my troubles to no one. After he had cost me 10,000 francs, and a new attempt at extortion had failed, he denounced me to the police. I was arrested and charged with having sexual relations with my accuser, who was as guilty as myself! I was condemned to imprisonment. My social position was totally destroyed, my family brought to sorrow and shame, and the friends who had heretofore held me in high esteem now abandoned me with horror and disgust. That was a terrible time! And yet I had to say to myself 'You have sinned, yes, grievously sinned against the common ideas of morality, but not against nature.' A thousand times no! A part of the blame at least should fall upon the antiquated law which would confound with depraved criminals those who are forced by nature to follow the inclinations of a diseased and perverted instinct.

"The manner of satisfying my sexual desires is not buggery, but a sort of onanism, produced by handling the genitals of another, whereby an healthy but not extremely exciting flow of semen takes place, after which I feel refreshed and relieved. You may get an idea of how natural and spontaneous our actions are from the following incident.

"About two years ago I was with a friend in a company of jovial acquaintances. A bright fun-loving young lady whom I might well have a passion for, but who, as a woman, made no impression whatever upon me, dressed herself in the uniform of an officer with mustache, etc. From the minute when she entered the room in this metamorphosis I felt a sexual passion towards her.

"A friend once advised me to marry and dress my wife in male attire. I know of a case in Geneva where an admirable attachment between two men like myself has existed for seven years. If it were possible to have a pledge of such a love they might well make pretensions to marriage, but in the absence of that the proposal of Ulrich seems laughable indeed. One thing is true. Our loves bear as fair and noble flowers, incite to as praiseworthy efforts as does the love of any man for the woman of his affections. There are the same sacrifices, the same joy in abnegation even to the laying down of life, the same pain, the same joy, sorrow, happiness, as with men of ordinary natures.

"I will add that as far as I can judge I am of perfect physical build, and that there is nothing remarkable as regards my sexual organs. My walk and voice are masculine, and one would never suspect me to be what I have described, while many of my class betray themselves by their expression, down-cast eyes, gait, posture, bending of the body, manner of sitting or dress.

"In consequence of the disgrace which came upon me in my fatherland I am obliged to reside in America. Even now I am in constant anxiety lest what befell me at home should be discovered here and thus deprive me of the respect of my fellow-men.

"May the time soon come when science shall educate the people so that they shall rightly judge our unfortunate class, but before that time can come there will be many victims."

CASE II. Count Y., 34 years of age, German, bachelor, consulted with me in 1882 regarding nervous debility and abnormal sexual impulses.

He is of a muscular, masculine appearance, and with the exception of neuropathic eyes is in no way outwardly remarkable. His mother was a woman of a highly organized, nervous, passionate nature, whose mother was extremely eccentric. His father was somewhat mentally deficient. Two sisters are apparently of normal intel-

lectual qualities and of an entirely normal physical organization.

The patient appears as an average man, somewhat overstrung, poetically inclined and of fine feeling. As far back as he can remember he has had erections and sexual desires. In childhood he was attracted as much toward boys as girls, but towards the latter in an entirely Platonic manner, while toward the former he was sensually excited so that erections would take place.

He was a bright boy, liked to play soldier and preferred the company of boys. In his youth his sexual desires tended still more towards males. "I would sit for hours near my school-fellows," he said, "and experience immense erections without knowing what it meant." He never remarked any special sensation in associating with women. He did not care to dance except with boys. At twenty-one years of age the itching of a flea-bite upon his genitals led to his discovery of masturbation. He then practiced self-abuse for several years and became highly nervous as a consequence. Of late years, however, he has been little addicted to the vice.

At twenty-two he made an attempt at copulation, but the whole operation was extremely disgusting to him. As he expressed it, he "could not bear the pressing into the woman's orifice." He could not bring himself to make further attempts. A woman's breast seemed to him lacking in symmetry and reminded him of the udder of a cow. While he was impotent and unsatisfied in coition he found that masturbation performed on him by a woman aroused lively erections and sensual gratification. He practiced this with women until his perverse sexual desires towards the other sex took a new turn. This was caused by voluptuous dreams, in which he seemed to act with a woman in such a manner that she would beat him. After this the only further and only possible sexual indulgence with women was in the following manner. He hired a courtesan (a woman toward whom he felt any æsthetic or intellectual interest was not fitted for the purpose)

undressed himself completely, while she was not allowed to disrobe and let himself be beaten by her. She must stamp on him with her feet and strike him with a whip. That aroused his passions to the highest degree. At the close he would lick the woman's foot. In fact the foot of a woman or of a boy is the only thing that sexually excites him. With that his sexual excitement reaches its height and an emission takes place, but scarcely does this occur when the degraded position in which he finds himself becomes abhorrent to him. He then seeks to catch hold of the woman, but never strikes her, and as soon as possible withdraws from the situation he now finds so painful, sexually satisfied, but filled with disgust that he should have again been so weak.

His genuine sexual feeling, however, attracts him to those of his own sex. Masturbation and mistreatment by women is only a substitute for masculine indulgences. He abhors men, his delight is in handsome gentle boys with feminine features. Even the *smell* of such a one excites him and arouses sensual desires. His highest pleasure would be to undress such a boy, kiss and embrace him and handle his genitals, in doing which there would probably be an emission. He has never been able to bring himself to do this, being restrained by moral and legal considerations. Were he in a country, however, where male prostitution is suffered, and could he make use of a boy already prostituted, he would be happy.

The patient has not felt unhappy in his perverted sexual instincts, but that social customs should deny what to him is the highest sexual enjoyment, makes him feel melancholy, dissatisfied and embittered, and increases his neuropathic symptoms. His practices with woman are but unsatisfactory make-shifts. His erotic dreams are of intercourse with boys and sometimes relate to beatings at the hands of women. The patient is hypospadiacal. His nervous affections are the common form of cerebral and spinal neurasthenia with agoraphobia, fearfulness, headache, spinal irritation, hypochondriacal paroxysms, which indul-

gence in alcohol sometimes greatly relieves. The remedy referred to alleviates the neuroses while the sexual anomalies remain unchanged.

Patient has recently married. His wife is a lady who attracted him through her qualities of mind and who, on account of female troubles and probably weakened sexual instincts makes no demand on his sexual qualities. Patient describes the marriage as a form to satisfy society. The mental qualities of the lady satisfying his intellectual tendencies make the union possible. He wishes for a childless marriage in order that his pathological peculiarities may die with him and that he may not leave a curse upon future generations.

CASE III. Mr. Z., 36 years of age, bachelor of high social standing, consulted me in 1883 in regard to perverted sexual instincts and resultant nervous troubles. His father was neuropathic and eccentric; his mother of a nervous organization; her brother showed signs of sexual perversion. Of ten brothers and sisters one sister is psychologically abnormal, two others dislike men and love women.

Patient as a child was weak-limbed and of a nervous organization. He was fond of feminine work and play. One of his happiest recollections is of appearing at a children's party when seven years old dressed as a woman. He had no fondness for boys' games or for hunting and was often laughed at and scolded for his feminine ways. At the Institute he acquired the practice of onanism and continued the vice afterwards. At first it was without evil effects. At the age of thirteen he formed a burning attachment for an elderly officer. From that time on he only cared for those of his own sex and then not for the young, but for those of riper years and robust form. Many such men made a fascinating impression upon him. He was soon able to tell at a glance whether an individual had tastes kindred to his own, and a simply sympathizing look from such a one would cause an erection, while women were no more to him than "porcelain pictures," and were

even repulsive to him. This slenderly built young man said that he could see no beauty save in the male form and that the bosoms and wide hips of women were unæsthetic and ungainly. He could only imagine how a man could love a woman by reversing the conditions and putting them in the language of his own sensations. At the galleries it was only male statues that pleased him, and at the circus he took no interest except in the male performers. At sixteen he became desirous of looking at male genitals. After he was grown up his comrades took him to a brothel. He could not perform the act of coition from sheer disgust. Manustupration by woman produced ejaculation accompanied by sexual gratification. About six years ago an attempt was made to draw him into a marriage with a lady who was a most desirable party. He felt immeasurably unhappy, was for a long time afflicted with melancholia and felt as if relieved from imprisonment when the lady married another.

He recognizes the fact that he can only find happiness by associating with men. For many years he had suffered from severe neurasthenia, with severe headache, sleeplessness, genital irritation, spinal irritation, hypochondriacal symptoms etc., all of which he ascribed to the fact that he had been unable to satisfy his sexual desires, and to onanism which he had practiced as a substitute. Afterwards when he found an opportunity to gratify his passions he felt relieved and temporarily free from all neurasthenic symptoms. In the meantime the substituted practice of onanism materially aggravated his nervous derangements and made him entirely out of humor.

Sexual satisfaction was obtained by kisses and embraces with a man, especially if he lay on top of him. He would then almost immediately have an ejaculation, producing extraordinary gratification. It seemed to pervade his whole body like a magnetic current. He felt happy and stimulated. Every ten or twelve days he would experience these desires, and if he could not satisfy

them he became nervous and irritable and had all sorts of nervous derangements.

Sometimes in order to have ejaculation he was obliged to have some man handle his genitals. He never touched the other's. He felt in fact like a woman in the sexual act. His highest idea of pleasure was passive *pederasty*, but from moral reasons and from regard to health he had never attempted it. In Italy he once attempted active pederasty, but disgust prevented him from completing it: it reminded him too much of coition. His highest happiness would be a sort of marriage with a beloved being of the male sex. The few erotic dreams which he experienced had for their subject men.

Through recent publications the patient became aware of the indications of disease which his perverted sexual instincts show. It troubled him, but at the same time gave him comfort, as heretofore his supposed dereliction from a moral stand-point had given him much disquietude. With tears in his eyes he told me that he was the most unhappy of mortals, not only because of his abnormal sexual position and the resultant nervous disorders, but also because he feared insanity as a result of his troubles. To one of his sensitive and frank nature the most painful feature of his situation is that he must not only repress his desires and thereby suffer deeply in mind and body, but that he dare not give expression to his feelings and desires or live in the manner in which they lead him. This throws a shadow over his whole life. The constant fear that his secret will be discovered and his social position thereby destroyed makes his whole life miserable. He dare not be a father lest he should bequeath to his children his own abnormal nature and thus place upon them a terrible curse.

Patient is an intellectual appearing man, of strong masculine build, with heavy beard, showing no abnormal appearance and having nothing feminine about him, either in his manner or his dress. An expert would remark the extremely neuropathic eye. The nose is unusually large.

The upper teeth are somewhat decayed. The skull measures 53 centimeters. The pelvis and genitals are normal.

CASE IV.—In December, 1881, Herr Von Z., a Pole, age 51, consulted me regarding neurasthenia, the commencement of which he placed at the age of seventeen. His mother was not mentally normal. She hated her children and loved her dogs. Patient entered the Cadet School and there acquired the practice of onanism. He developed normally, sexually and otherwise, enjoyed sexual intercourse with women until he was 25 years of age, married a congenial lady, acquired at 26 serious nervous complaints and developed a fondness for those of his own sex. About that time he was compromised in a treasonous plot and sentenced to five years in Siberia. During these several years his nervous complaints and perverted sexual instincts were aggravated as the result of continued masturbation. Being released from imprisonment at the age of thirty-five, the patient found himself suffering from cerebral and spinal asthenia, dyspepsia, hypochondria, trembling, morbid anxiety, spinal irritation, nocturnal emissions, etc.; and, hoping for relief, he had spent the time since then in visiting numerous watering places and medicinal springs, without however being materially improved, to say nothing of being cured.

During all this time his abnormal sexual feelings were in no way changed. He lived for the most part separated from his wife, for whose mental qualities he had a high regard but toward whom, as a woman, he was as indifferent as toward all other women. His otherwise pronounced fondness for those of his own sex was entirely Platonic. He was satisfied with their friendship and with hearty kisses and embraces. Whatever lascivious dreams he had had those of his own sex for their subjects. During the day too the sight of well-formed handsome men would cause erections and ejaculations, while the most beautiful women had no effect upon him. At times of great excitement he would have erections at the sight of even male

statues. At the circus or in the ballet it was only the men who interested him. At times he would recur to his old vice of masturbation, but in later years to a diminished extent. His refined qualities of mind withheld him with horror from the vice of pederasty.

He considered his perverted tastes as a physical malady, without being rendered unhappy by it, probably in consequence of the decided weakening of his sexual powers.

A diagnosis (*status præseus*) showed neurasthenia with severe paralgia and spinal irritation. There were no signs of physical degeneration, and his personal appearance did not give the slightest indication that he felt himself to be of abnormal sexual qualities and considered himself as a woman toward men.

A course of common faradization gave the most gratifying results after a few treatments. From one treatment to another the patient felt himself refreshed and strengthened, and apparently relieved from his long-continued nervous disorders. After about twenty treatments he felt a return of *libido sexualis*—not as formerly, in a perverted manner, but normally, as it had existed prior to the age of twenty-five. Another feature was that the occasional lascivious dreams which he had were from now on concerning connection with women, and at length he told me one day, with expressions of great joy, that he had had coition with a woman, and felt the same pleasurable sensations as he used to feel twenty-six years before. He hoped now to be freed from his nervous maladies and from his perverted sexual idiosyncrasies. He commenced to live with his wife again. During the following six months, during which time it was my pleasure to observe my former patient, his hopes were fully realized. He went to Russia, and much to my disappointment, I have been unable to obtain further particulars of him.

CASE V.—Herr Y. Z, 29 years old, a real estate owner in Russian Poland, was brought to me by his relatives in 1881. His grandfather in his old age suffered much from

melancholia and died suddenly at the age of forty-seven. His mother is of a neuropathic family, herself neuropathic and afflicted with all manner of tic. His brother committed suicide, and a cousin showed signs of perverted sexual instincts.

For many generations the family has intermarried with blood relations. The patient had been troubled for many years with scrofula and headaches. At the age of six years he suffered from a cerebral injury. At thirteen he began onanism. A few years later he acquired severe cerebro-spinal neurasthenia with irritable genital weakness and frequent pollutions. The patient recognized the evil effects of masturbation and did his best to refrain from it. Occasional yieldings to the vice brought on increased nervous troubles. In the last few years hypochondriacal symptoms appeared, which led the way to delusions of persecutions but stopped short of masturbatory insanity. The neurasthenical neurosis remained the same.

In the course of the diagnosis it appeared that the patient was also afflicted with perversion of the sexual instinct. He informed me that since childhood he had had a fondness towards males, and since the age of nine years had frequently been in love with them. His fondness for men was entirely Platonic until the age of twenty, when he began to feel a longing for sexual connection with them. His particular delight was in old men of about sixty. The female sex had no attractions for him. He had never realized any passion for sexual commerce with them. Until he was twenty years old he had been satisfied to be in the company of men, to think about them, to make them presents and show them friendly services. In order to alleviate the burdensome and weakening effects of self-pollution he had at times attempted, under medical advice, to hold sexual intercourse, but he found himself impotent and with no inclinations therefor. He found his pleasure in intimacy with men. In his weak sexual condition a kiss or an embrace was sufficient to produce an erection and ejaculation whereby he felt

strengthened and refreshed. It was only when the emissions were too copious that he felt tired, weak and enervated. In recent times he had become so excitable that the mere sympathetic pressure of a man's hand was followed by an emission. He found himself therefore compelled to withdraw from the society of men.

During a stay of several months at Gratz he formed an attachment for a student and a bath attendant, but of a purely Platonic nature. He overwhelmed them with presents. A tonic treatment, common faradization produced a decided improvement in the neurasthenic conditions. At the same time the delusions of persecution disappeared.

Late in the fall the patient went to Venice. There he fell into the company of those of his own class (*Urninger*). He fell in love with a nineteen-year-old youth and made him his mistress. Their sexual intimacy consisted in kisses, embraces and the handling of the other's genitals. He never went so far as pederasty. He formed other similar attachments, caused a scandal in the hotel and was obliged to leave Italy. I saw him in the spring of 1882 and was surprised at the excellent mental and physical appearance of the patient. So long as he could satisfy his sexual desires the neurasthenic symptoms disappeared entirely and the delusions regarding persecutions remained dormant. When he returned home where he could not satisfy his sexual desires there was a recurrence of neurasthenia and delusions, which finally obliged his removal to an insane asylum.

Herr Z. is of a muscular and wholly masculine appearance. The left testicle is not descended. Otherwise the genitals are well developed; hair and beard abundant; voice manly; demeanor shy, but in no way offensive. He does not consider his perverted sexual instinct in the light of a disease.

CASE VI. Miss X., 38 years old, consulted me in the fall of 1881, regarding severe spinal irritation and chronic insomnia, for which she had extensively used chloral and morphine.

Her mother was of a nervous organization, the rest of the family apparently healthy. Her sufferings dated from a fall upon the back received in 1872, which caused the patient a severe shock. In connection therewith there developed, neurasthenic and hysterical symptoms, with severe spinal irritations and insomnia. Episodically there was hysterical paraplegia of eight months' duration and instances of hysterical hallucinatory delirium with convulsions. In addition there were symptoms of morphinism. A stay of several months in the clinic removed these and also materially alleviated the neurasthenic condition. These gratifying results were in great part accomplished by general faradization.

At her first appearance the patient attracted attention by her clothing, features, man's hat, short hair, spectacles, gentleman's cravat and a sort of coat of male cut covering her woman's dress. She had coarse male features, a rough and rather deep voice, and, with the exception of the bosom and female contour of the pelvis, looked more like a man in woman's clothing than like a woman. During all the time I had her under observation there were no signs of eroticism. When I spoke about her clothing she said she wore it because it was more convenient.

I incidentally discovered that as a child she had a fondness for horses and masculine pastimes, but never took any interest in feminine occupations. She later developed a taste for literature and sought to fit herself for a teacher. She never enjoyed dancing, and the ballet had no interest for her. Her highest enjoyment was to go to the circus. Up to the time of her sickness in 1872 she had no particular fondness for persons of either sex. After this there developed in her an attachment toward women, especially young women. She was never passionately aroused in her intimacy with them, but her friendship and self-sacrifices towards those she loved was boundless, while from that time on she had an abhorrence for men and male society. Her relatives informed me that the patient had an offer of marriage in 1872 but refused

it. She took a trip to a watering place and returned entirely changed sexually, and made use of expressions which implied that she did not consider herself to be a woman. Since then she would only associate with women, had love affairs with them and let fall insinuations that she was a man. Her passion for women showed itself in tears, fits of jealousy, etc. While she was at the baths in 1874 a young woman fell in love with her, thinking she was a man in woman's clothing. When this young lady afterwards married Miss X became very melancholy and complained of faithlessness. Her friends noticed that after her sickness she evinced a decided preference for male clothing and a masculine appearance, while before her illness she had been in no wise other than a womanly character, at least as regards her sexual feelings.

Further investigations showed that the patient was carrying on a purely Platonic love affair with a young woman and wrote her tender love-letters.

Symptomatological Study on Somnambulism.*

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I. *Nature and Characteristics of Somnambulism.*—Somnambulism is a modification systematic, and in various degrees, of all the functions which constitute the life of relation: it forms a part of a group of analogous states, some physiological, as the intermediate state between sleeping and waking; others pathological, as the lucid lethargy, the general and systematic psycho-sensory delirium. Its definition, which it will be inconvenient to carry further for the present, implies then a preliminary acquaintance with the functions of relation and their normal and pathological modifications. So, faithful to the precept of Locke, we shall give it more precisely and more completely only after having studied the principal elements.

1. *Of the Functions of Relation in the Waking State.*—The nervous system of relation places the body in relation with the medium which surrounds him and the beings which people it with him; it gives him the means of satisfying the instincts which relate to the preservation and propagation of the species; it permits him finally, if he belongs to the highest grades of the animal kingdom, to communicate with his fellows by means of signs and to acquire a notion more or less conscious of his own existence and of the phenomena which occur within or around him.

The sum of the functions which concur to this complex result has received the name of the *life of relation*, and this mode of life has been from all time opposed to the *vegetative life* which alone animates the vegetables and the

* Translated from "Le Progrès Médical," by E. M. Nelson, M. D., St. Louis, Mo.

lowest animals. Still modern comparative physiology and the ancient Hylogist doctrine, renewed in our day, protest against so radical a distinction.

The logical order of a complete exposition would demand that we should here undertake a detailed analysis of these functions. It would be necessary first to show how, the sensory and motor functions being still obscure and diffuse in the protoplasmic animals, they are elevated by a series of progressive differentiations into the faculties of man, whose nervous system offers the example of the most exalted hierarchy and of the division of labor carried to its utmost limits. We should show, on the other hand, how the sensations which Condillac and the sensualists regard with reason as the source of all knowledge, produce the most elevated intellectual and moral faculties, and upon what basis rests the distinction of those faculties in two orders which live in a state of constant antagonism: the *imaginative* faculties which suggest and lead, and the co-ordinating faculties which decide and direct. It is impossible for us, unfortunately, in so short a work, to consider, even briefly, this chapter of normal psychology which we still regard as the necessary basis for all psycho-pathological study; and we shall be able only to supply this in characterizing in a word the functions of relation as we shall describe their normal or accidental modifications.

These functions, like all those which result from a high degree of differentiation and from a recently acquired perfecting, are fragile. The groups which they form are dissociated with facility. Too active to work without cessation, they are subject to the necessity of a periodical repose, which is sleep; too delicate to bear the least derangement in their conduct or conditions of existence they suffer from their excess of activity, from disuse even, or from the least disturbance of nutrition of the organ which serves for their support. Composed, however, of different functions which represent each a different degree of perfection attained at the time by the rudimentary nervous system and its primitive functions, they do not

succumb all at once to the perturbations which attack their existence. Thus there may be observed, either normally, under the influence of fatigue, or pathologically, under different influences, states which represent all the degrees between this complete suspension and their full exercise. In the normal state, these states succeed in a certain order during the passage from the waking state to that of sleep and during the return to the state of waking or constituting dreams; in the pathological state they characterize a whole group of affections to which is appropriate the name of *affections of the life of relation*: such are the neuroses and psychoses.

There is, in fine, a general law, that in every complex organism, the suppression of one of its functions confers upon the others an unaccustomed activity and energy: it seems that those which survive have inherited from that which is no more. The nervous system does not escape this law; it is even controlled by it. So we see in the course of those processes of systematic dissociation of the functions of relation, of which the different forms of somnambulism are special cases, those which are respected display an activity and energy so much the greater as the antagonistic functions have the more completely disappeared. So the excito-motor power of the spinal cord is exalted after the section of the bulb which has submitted the spinal axis to the controlling influence of the brain.

The notion of the systematic dissociation of the groups which form the functions of animal life, and of the disturbance of equilibrium which is the consequence of the disappearance of some and the persistence of others is then the key to the normal and pathological modifications which this mode of life can undergo. Sleep, or rather the intermediate state between sleeping and waking, is the type of the one; somnambulism is the type of the others. They are the two types which we are about to describe and compare in the following paragraphs.

II. *Of the Functions of Relation during the Intermediate*

Period between Sleeping and Waking.—The invasion of sleep is not sudden, and all the functions of relation are not in the man who is going to sleep sharply abolished. There exists between the state of complete wakefulness and absolute sleep an intermediate period which M. A. Maury* particularly well describes, and of which attentive and repeated observation permits us to seize the different phases: it is the *hypnagogic period*, during which the functions of the relation are dissociated and disappear in a regular and systematic order.

Many conditions upon which we have not space to insist dispose to sleep; but it is at the moment when, our lids becoming heavy, close in spite of our effort, that the hypnagogic period commences. The sense of vision is at the same time suppressed, and a languor which is not destitute of charm pervades our whole muscular system. The other senses gain by the suppression of the most active of them an increase of delicacy and activity; the least sounds are heard and the slightest contacts are perceived. These vanish and disappear soon in their turn, and it is the sense of touch which fades away last. Moreover, the hypnagogic hyperæsthesia may be carried to the extent of hallucination. Often before we sleep we see luminous moving phantoms, bizarre figures; still more frequently, perhaps, we hear articulate sounds, tones of voice; sometimes our own name comes clearly to our ear; more rare are hallucinations of touch and general sensibility. As to those of taste and smell, we have never observed them.

The intellectual functions then enjoy all the fulness of their activity. Furthermore, the silence and obscurity of night, the quietness of the body, the muscular torpor which overcomes us, the suppression, in a word, of all external excitation and of all distraction of sensory origin, give to our mind, disengaged as it were from its corporeal harness, a power and clearness which are unknown to it in the state of waking. We enjoy then that intellectual isolation which a philosopher of antiquity achieved, they say, at the cost

* A. Maury, "Le Sommeil et le Reve," 4th ed., 1878.

of his sight. It is the moment when we can best discuss with ourselves the chances which destiny offers us, to make an examination of consciousness, and to seize all the data of a difficult question.

Let us take advantage quickly of this precious moment so favorable for meditation. Soon commences that dissociation of the intellectual faculties which differs in the affections of the group which we are studying only by the systematic order in which it is effected and the degree which it attains. The higher faculties of the mind, the co-ordinating faculties, whose sum constitutes the reason, disappear the first, being the most fragile because they are the most newly acquired by the individual and by humanity.

The will, as the power to act and the executive agent of the intellect is attacked first; it seems that by a phenomenon analogous to that of aphasia, by a sort of *adynia*, the way is interrupted between the center which decides the action and those on which depends the motor influx necessary to its execution. Plunged into a state of calm and well-being analogous to the "feeling of happiness" signalized by Moreau, of Tours, among the remarkable effects of Indian hemp, we yield in peace to the play of our intellectual faculties which, ready to be extinguished, throw out a last and most brilliant flash, but we have a horror of all work whether it be destined to produce a movement or to direct our thoughts.

Almost immediately we lose the faculty of attention which, closing our senses to external excitations and effecting a selection among the ideas and images which arise on every side, allow to come into consciousness only those which are useful to the end which our mind pursues; then judgment, that balance of the mind which permits us to compare our ideas, to seize the logical relations and to foresee the consequences of the acts which they suggest to us.

The imaginative faculties are not released. The unshackled mind is like a vessel without a pilot, without a

rudder and without ballast. Suddenly from the depths of memory arise ideas and images long ago forgotten; bizarre thoughts, singular conceptions, often ingenious and profound, appear without any reasonable association of ideas to explain and justify them. They follow and link together without apparent logical connection; like brilliant meteors they traverse the field of the intellect and disappear without leaving a trace. The *Ego* stands by as a spectator to this play of artifice, to the spontaneous coming to light of ideas and images which, in spite of their individual value, would be of no use to him, for he can neither arrest them in their passage nor bind them logically together, nor recall them when they have disappeared.

Finally the ideas and images become less distinct; the imaginative faculties are extinguished in their turn: one instant yet the *Ego* watches alone over the intellectual faculties and the drowsy senses; then, suddenly, he disappears. The functions of relation have become latent; the vegetative functions alone occupy the scene. Sleep is complete.

The return to the state of waking is not less gradual than the invasion of sleep. Like that, it is preceded by an intermediate phase, a sort of hypnagogic period in return, characterized by a progressive resurrection of the functions of relation in a reverse order to that which had occurred in their failing. Consciousness, that quality of mind recognizing its own functioning, awakes the first. In the commencement vague and confused, it soon becomes more distinct, then singularly lucid. We know, in fact, that, aroused from sleep in the midst of a dream we are ignorant sometimes whether the images which we have just perceived and the conceptions which presently occupy the mind are imaginary or real. Often, on the other hand, one has in a dream for a few moments a perfectly distinct notion of his own existence, while not thinking on any definite object. One knows that he exists, but exists without thinking.

Soon, however, vague images arise, some wandering

ideas which one can neither call up again at will, nor associate together, nor retain. The memory of old and forgotten facts reappears, but it is only after an appreciable interval a recognition of the present situation and the memory of recent facts returns. There is here a confirmation of the law of retrogression formulated by M. Ribot.* Who does not know from having had the sad experience that on the morrow after a disastrous day one awakes in his habitual state of mind and enjoys tranquilly the calm which renders so agreeable the first instants which succeed sleep, until conscious memory, re-entering the scene, forces one to think upon the trouble of the present or represents brutally the misfortune by which he has just been disturbed.

The last effects of sleep finally pass away. The attention and judgment return to us the power of following and co-ordinating our ideas; but the will remains for some time still powerless. Every coherent intellectual operation and every movement are willed, and especially executed, with difficulty. The activity of ideas reappears however in the inverse order of disappearance; the weights which oppress the lids are raised; the eyes open to the light of day. Finally the mind regains all its vigor, the senses all their acuteness, the muscles all their force: the state of sleep has given place to the state of waking. The awaking is complete.

The invasion of sleep and the return to the state of waking are then two parallel but contrary processes, characterized, the one by the disappearance in a certain order, the other by the return in an inverse order of conscious sensibility, of voluntary motion, of physical co-ordinating faculties, of imaginative psychical faculties, and finally the conscious quality of the mind, the sum of which constitutes the life of relation advanced to its highest degree of perfection. On the other hand, by virtue of the general law which we have already recalled, at the commencement of this chapter, these functions are by so much the more

* Th. Ribot, "*Les Maladies de la Memoire.*" Paris, 1861.

active as they are less numerous and as those which balance them and regulate their play, have more completely ceased to manifest themselves; so we see, as well in the hypnagogic period which precedes sleep as in the analogous period which prepares the waking, the sensory and psychical centers enter in and furnish the elements of a veritable psycho-sensory delirium, when the co-ordinating functions have disappeared or have not yet resumed control of the fancies of the mind.

Dreaming, of which we cannot avoid speaking here a few words, is a phenomenon of the same order. It is an accident of sleep, it is an anticipated intermediate state, an incomplete awaking, aborted, arrested in one of the phases of its evolution. Let the process of awaking be arrested, for example, after the return of consciousness of the *Ego* and the imaginative faculties, there is established then a veritable psycho-sensory delirium of which the *Ego* is the witness, of which he will preserve, on awaking, a more or less exact remembrance, but of which he can neither foresee, nor discuss nor arrest the course. Thanks to the law of cerebral reflexes, based on the theory of subconscious automatism which will be considered later, the images and ideas which arise from the storehouse, of which memory holds the key, are linked together with a certain logic; but the dream is none the less, most frequently compounded of absurdities and impossibilities which defect of judgment and attention makes us find perfectly natural. It is so that a dreamer is never surprised at riding in a boat in a street which is familiar to him and on which he recognizes all the houses, or at ending in America a conversation commenced in Paris.

It is possible that these dreams are sometimes the fruit of spontaneous activity of sensory and psychic centers, incompletely asleep; but they have often for a point of departure a fortuitous sensory excitation which the *Ego*, deprived of rule and compass, cannot judge at its just value. MM. Moreau, of Tours, P. Despine, Taine and others still have cited numerous examples of these facts

which M. Maury has studied experimentally in his own person. It is so that a blow upon the head makes us dream of a battle and a wound in that region; and that a pain in the neck may be the source of a long romance, of which we are the heroes and in which we are successively arrested, judged, condemned and hanged.

III. *Of the Functions of Relation in the different degrees of Somnambulism.*—Somnambulism is a special mode of awaking, and its different forms are only successive degrees of a process which advances progressively from a state of sleep or absolute lethargy to the state of complete awaking. The lethargy which serves for a point of departure for the ulterior states may declare itself spontaneously or be provoked by different manœuvres which we have called *hypnogenic influences*, and each of those states themselves may be spontaneous or provoked: from this comes the classical division of somnambulism into natural and artificial, spontaneous and provoked, which loses much of its importance for those who succeed in grasping the bonds which unite the different forms of this neurosis and the general conditions which predispose to it and determine it.

The different degrees of the mode of waking which we study may be observed in the same subject in a state of isolation and fixity or taking the place of one another, either in the course of one single spell or in several different spells. A predisposed subject may, in other words, never present but a single phase of somnambulist waking or may present several of them, either in the course of one waking or in several successive awakings: there are also occasional individuals, a veritable providence for magnetizers, in whom all the degrees of somnambulism may be at will provoked and observed.

Let us suppose, in order to choose a case favorable for a didactic and rapid presentation of the facts, that we have to do with a somnambulist of this class, whom we can first put to sleep, then awaken by degrees while observing the different phases of the awakening. We shall

then see displayed a series of tableaux, each one of which will represent a stage between the lethargy which our manœuvres have caused and the state of waking of which it will be equally possible for us to cause the return. Each of these tableaux will be the image of a kind of special life, of a mode of incomplete activity and disturbance of the functions of relation, characterized by the revival and excitation of certain among them and by the suspension of the others. Let us see in the order of the successive appearance the catalogue and explanation in what is essential.

The first tableau shows us the subject plunged into a state of lethargy very analogous to absolute sleep. All the functions of relation are suspended; the vegetative life alone persists and assures the prolongation of the existence.

In the second tableau the awaking has commenced. Under the influence of special sensory excitations the excito-motor power of the medulla has reappeared, and we observe the phenomenon of *neuro-muscular hyperexcitability* which Prof. Charcot and some of his students have diligently studied.

The third tableau affords us evidence of the curious effects of *somnambulistic automatism*. Sensory stimuli, not perceived, are the point of departure of complex and systematized reflexes which permit the patient to repeat automatically all the acts which long habit has rendered unconscious, provided they are logically connected with the sensory stimuli which determine them. Automatic obedience, automatic imitation, automatic repetition of sounds, even articulated, are the most striking manifestations.

The spectacle which the fourth tableau presents us is still more animated and varied; and some of the scenes which it represents have made at times the fortune of magnetizers and the ruin of animal magnetism. We see here the somnambulist in the state of dreaming. His senses unequally but often prodigiously stimulated, furnish him

numerous hallucinations, and permit him to accomplish acts which have led to the belief in somnambulistic perversion or double sight; his imagination freed from all restraint opens his mind to all sorts of suggestions; the exaltation of his memory produces the effect of divination. This phase of somnambulism, in a word, abounds in phenomena which seem extraordinary because they are unaccustomed, and which an attentive criticism permits almost always to reject as illusory or to understand and consequently accept as real.

The somnambulistic life which the fifth tableau shows to us is perhaps a still more interesting spectacle, more instructive and more surprising. The somnambulist appears to us here, living a life real and differing in nowise save by modifications, often profound, of the character and moral sense, from that which he led formerly. And moreover, whether the access of somnambulistic life has been provoked or has come on spontaneously, whether it has lasted a few minutes or several weeks, whether it has been filled up by a vain conversation or by serious occupations, the subject, on coming out from it, will retain no remembrance of the sensations, words, acts, or of the facts which have marked its course. His *amnesia* will be complete and almost if not quite irremediable.

The sixth tableau, finally, is that of the ordinary life, of the state of awaking to which the subject has come after having passed through, either pausing or not, all the stages of the special mode of awaking which we have just analyzed.

All the degrees of somnambulistic awaking, in a word, are comprised between two extreme states, lethargy and wakefulness. They form a series of successive awakenings, to which the name of automatic series may be appropriate, for their common characteristic is the sleep or at least *incomplete* awakening of the conscious activity of mind. This is the mode of succession:

A. Somnambulistic lethargy.—Sleep of all the functions of relation.

B. Automatic series.—Successive awaking of the functions of relation.

1. Motor automatism.—Neuro-muscular hyperexcitability.

2. Passive somnambulistic automatism.

3. Active somnambulistic automatism. — Automatic dreams.

4. Active somnambulistic automatism.—Automatic or subconscious life.

C. State of awaking.—Amnesia.

II. *Forms or Degrees of Somnambulism.*—We are sufficiently advanced in the recognition of the psychological base upon which somnambulism rests to grasp what is incorrect in this term; we will however retain it in this study, for it has the merit of bringing together under a commonly known appellation, states which while very different from each other have none the less a common origin and nature, since they belong to the same process, are substituted the one for the other and have all for an essential characteristic the suspension of the conscious activity of mind: these are the states the most important characteristics of which we are now about to consider in their order of natural succession.

A. *Somnambulistic Lethargy.*—The somnambulistic lethargy, *reactionlose Schlaf*, of Heidenhain, is the base and point of departure necessary for all the other forms of hypnosis. This it is which at first takes possession of a subject who waking afterwards in a fashion more or less complete, is arrested at a degree more or less elevated, of this series of states intermediate between lethargy and awaking, which is the hypnotic series.

The lethargy may appear spontaneously or be provoked by hypnogenic influences, the "magnetic passes," for instance. The success in the last cases is far from constant: experience may frustrate, abort or turn into the tragic. Often in fact, especially with neophytes and irritable or recalcitrant subjects, there is obtained only a state of torpor with cephalalgia which is only the prelude to a

veritable lethargy, or the experiment terminates by an attack of convulsive hysteria. When hypnosis is complete its invasion is manifested by objective and subjective signs: the first visible to the assistants, the second perceived by the subject himself.

Although women are generally curious as to new sensations, the versatility of their humor, the difficulty which they experience in fixing their attention and their spirit of contradiction, often lead them to ridicule attempts at hypnotization to which at first they submitted with good grace, to grow angry, and to seek to withdraw. The diminution of this resistance is with them the precursory sign of the hypnotic sleep. After a variable time their loquacity ceases, their movements become less brusque, their eyelids grow heavy, the head falls forward, an unconquerable sleep overwhelms them, and it is to repel this that they seem to employ all their efforts. We see them brusquely raise the head, convulsively open the eyes as to escape, and M. Richet has very finely analyzed this struggle of which the muscles of the eye are the special theater. "The patient," says he, "attempts, in order to open the eyes to contract the *levator palpebræ*, but as this muscle is paralyzed first, the lid remains closed; then he seeks to raise the lid by the action of the associated muscles, the superciliary and especially the frontal muscles; often even he carries the head backward in order to resist the sleep which is coming on; in a word, there is established a veritable struggle analogous in all respects to that which one is obliged to carry on when during work one is assailed by sleep; finally, after some minutes the resistance of the patient is forced to yield."

Soon in fact the subject remains immobile, his eyelids, stirred by a vibratory trembling, remain closed, in spite of his efforts; his respirations become more frequent, deeper, sometimes a little snoring; sometimes movements of deglutition are produced. The somnambulistic lethargy is then produced.

The subjective phenomena which signalize the invasion

of the lethargy are a less easy study, for subjects at once intelligent and sensitive are rare, and on the other hand the amnesia generally encroaches upon the moments which have preceded the sleep. The old experiments practiced upon himself by Verneuil, as well as the more recent observations made by Heidenhain, Grützner and Weinhold upon their pupils, furnish us some information in this regard. We have submitted ourselves many times to hypnogenic actions of every sort—nay, even to the fascinating gaze of the famous Donati, but without any appreciable result.

In these experiments hypnosis was obtained by the process of Braid, that is to say by the fixation of a brilliant object held at a little distance from the root of the nose. The first phenomena signalized by the observers are a certain intellectual excitation which they attribute to "expectant attention," then a difficulty of vision due to a cramp of the accommodation and characterized by the dilatation of the pupil, a marked degree of myopia and a concentric narrowing of the visual field. These phenomena had been already noted by Gigot-Suard, in a woman put to sleep by means of the common passes. Then supervene numbness, heaviness of the lids, intellectual torpor, and the demand for sleep of which we have already spoken.

The hypnotic lethargy differs in no essential from normal sleep. The hypnotized subject seems profoundly asleep. The lids are closed, the eyes convulsed generally up and down, the pupils dilated. The sensibility is nul, obtuse or unequally distributed, according to the degree of hypnosis: when the lethargy is profound, the sensitive and sensory stimuli, so long as they do not exceed a certain degree, cause no reaction. Pinching, pricking, burning, faradization of the skin, of muscular masses and mucous membranes are not felt; the objects placed before the eyes whose lids have been raised are not seen; sounds, words do not appear to be heard; questions addressed to the patient generally remain without response, and one may announce to them the most

distressing news without causing them to come out from their torpor. Voluntary mobility is likewise abolished: the limbs when raised fall inert, and yet electric contractility of the muscles is respected. All the functions of the life of relation are abolished.

The vegetative functions alone persist: they seem even to exercise a greater activity than in the state of waking. Already Pau de Saint-Martin had remarked in the lethargic acceleration of the pulse and respiration, diminution of vascular tension and secretion of abundant sweat. Heidenhain, who by means of more precise methods, has arrived at the same results, has noted moreover the augmentation of the salivary secretion. More recently Tamburini and Seppili, making appeal to all the resources of contemporary physiology, have applied to the study of the functions of lethargic subjects the graphic method and the phethysmograph of Mosso: they have determined, notably, that at the moment of passing from the waking state to the hypnotic sleep respiratory movements become irregular, unequal, and undergo an acceleration due to the disappearance of the inspiratory pause and to the diminution of the duration of the expiratory pause: at the same time the cardiac and vascular pulsations accelerate and the face becomes congested. We find again in the publications of the physicians of Reggio interesting observations relative to the action of anæsthetics upon the functions of lethargics, but we can only mention them in a work solely intended to give to the reader a general idea of the subject which occupies us.

B. Automatic Series.—Subconscious States.—Every act passing in the organism without consciousness determining, assisting and judging it is an automatic act. Automatic acts then differ from reflex acts; for if the essential characteristic of these last is that of being involuntary, they are not necessarily unconscious. If we ask a person to make a feint of giving us a blow upon the eye we inevitably close the lids, although we wish to hold them open and we know that the blow will not be given; we

have moreover a partial consciousness of the instinctive and irresistible movement of defence which we make.

The field of automatism is then among the most extensive, and the rôle of consciousness in the ordinary acts of life is much more limited than a superficial observation of facts would make us believe. Consciousness is not a faculty, but rather a certain state of the faculties acting under certain determined conditions. So its activity is purely accidental: it is, as J. Soury well says, "An epiphenomenon which accompanies a certain psychical activity, and which only appears when the nervous centers display an energy quite intense during an appreciable period," and without saying with Galton, "The more I seek it, the less I find it;" its rôle is that of a passive spectator, we might demonstrate by innumerable examples that it appears only on grand occasions when we wish to do something anew. Descartes had, moreover, perfectly felt the automatic character of most of our actions, and his theory of the automatism of animals rests upon arguments which would equally apply to man.

All the phenomena of which the organism is the theater then can be and often are unconscious; those of organic life, outside of special pathological conditions, are necessarily so. Those of animal life become so, thanks to force of habit, and so much the more quickly as they are more simple and common to a greater number of living beings. An unconscious muscular contraction succeeding to an impression not perceived is an automatic act in the same manner as the multiple and complicated acts which are necessitated in walking, exercising, the use of speech when they are effected in certain conditions which we shall soon indicate, and it is only the most exalted faculties of the mind which cannot be exercised without the *Ego* being conscious and taking part: important works due especially to Laycock, Carpenter and Sir Wm. Hamilton, have, in fact, developed and erected into a body of doctrines the ideas of Leibnitz upon "latent thought, prescient

activity of the mind," and unconscious cerebration is to-day one of the chapters of psychology which philosophers discuss with the greatest interest.

Our daily life is then full of acts, some psychical, others purely mechanical, whose execution seems to demand the constant concurrence of the will, the incessant control of the consciousness, and which are yet involuntary and unconscious. After having caused us a long and troublesome apprenticeship, these acts accomplish themselves without our taking care, and permit us to apply all the resources of our mind to the acquisition of new ideas, to the apprenticeship to new movements. Thanks to this wonderful property, we can realize an economy of time and strength without which all intellectual or material progress would be impossible; we can entrust to a subaltern agent the execution of common operations of our mind or definitely regulate movements of our muscles. Unconscious cerebration plays in our intellect a *rôle* analogous to that of the machines in the social organization, where, if you like, it represents, in the ministry of the brain the exact and routine departments, while conscious cerebration fills the functions of a minister who gives or ought to give to these departments a wise and progressive direction. So, rather than admit with M. Delbeuf that "intelligence progresses towards automatism, which is its ultimate perfection," let us say with M. Franeolin that "education renders automatic and rapid the operations of the mind which at first have been slowly reasoned out, analyzed and conscious. * * *

And that it ought to make of us learned automata, capable of analyzing their own mechanism and of profiting by the time so gained to carry on new discoveries."

Take for examples muscular actions, even very complicated, which long practice has rendered unconscious. It will suffice to mention walking, dancing, fencing, the handling of instruments of music and experiment, even speech. Carpenter, we believe, reports that John Stuart Mill was seen, when intensely preoccupied with his sys-

tem of logic, to traverse in business hours, Cheapside one of the most crowded streets of the city of London, avoiding with much skill vehicles and passengers, to whom he gave certainly no conscious attention. He who fences does it certainly in an automatic fashion: he has learned slowly and painfully each cut and parry; but he would be buttoned twenty times if he attempted to analyze consciously his own play and that of his adversary. Every one has seen the pianist converse while letting his fingers run over the key-board. * * * Talma says that the actor plays and recites automatically the most difficult parts of his *rôle*, and the orator himself has no consciousness of the extraordinarily delicate and complicated movements which the expression of his thought necessitates.

"I have perceived," says Xavier de Maistre in one of the first chapters of the "Tour Around My Chamber," "that man is composed of a soul and an animal. * * * The great art of a man of genius," adds he, "is to know how to elevate the animal until he can go alone, while the soul, free from this hard association, can rise to heaven." They are not only the most humble functions with which "the animal" is charged; like the lackey who dons his master's garb, it often assumes those which "the soul" alone seems capable of discharging, and acquits himself as well as need be of his part. Like functions purely mechanical, the psychic functions may be unconscious. It is the great fact of cerebral automatism, of unconscious cerebration.

Here again some examples are necessary: let us borrow them from the most common psychical facts. To take the simplest case, sensations at first unconscious are stored up in the sensorium and can at a given moment, revive under the form of images or ideas. A lady dying, says Abercrombie, caused to come to her before she died her daughter aged only a few months. The infant grew without preserving the least recollection of her mother. One day, however, she had occasion to go into the death chamber and manifested a strong feeling. "I have the

impression," said she, "of having come some other time into this room; there was in this corner a lady in bed, appearing very ill, who bowed over me and wept." The work of memory is often automatic. Who does not know that the name which we have at our tongue's end comes back to us only when we cease to seek it, and how there are presented clearly to our minds in the morning the lessons which we learned in the evening when half asleep; finally, all those who have applied themselves to the study of foreign languages have found with surprise the progress which they had made after an interruption of their work. The works of pure imagination furnish us again ready proofs of the cerebral automatism which presides there. That is nothing else than inspiration, the sacred delirium: Driven, stimulated by the god of poesy, the poet, the musician, the artist, well endowed, create their *chefs d'œuvre* without willing it, in spite of themselves, almost without knowing it. "I do not think," said Lamartine, they are my ideas which think for me." A certain degree of automatism is perhaps that which separates principally genius from talent.

The *rôle* of automatism in the highest functions of the intellect is not less important: it is even the condition of their exercise. Common sense is only an unconscious judgment; medical tact is only an unconscious operation of the mind, recalling the fruits of long previous observations. Moreover, automatic cerebration is a means which those should comprehend who devote themselves to works of the higher order and especially to works of systematization and of synthesis. "In spite of all the care which we take to digest our materials," says Tucker, "we cannot attain it completely; but after a night of rest or a few hours of recreation, or after having given some other occupation to the mind, it finds on its return that these different materials have been classified during its absence, and in such a manner that their mutual relations, their dependence, their consequences, are perceived at first sight."

Without pushing this discussion further, we can conclude that automatism plays a grand and useful rôle not only in the execution of our movements, but also in the operations of our minds. Without it we should never be equal to our work. In the normal state, however, its domain has limits and certain conditions are necessary to give it scope, just as certain influences set a boundary to it.

The habitual and frequent repetition of an act renders possible its automatic execution; a sensation directly associated with this act by a logical relation fixed in the memory is the condition of its accomplishment. It is only after attempts repeated and long unsuccessful that the child learns to walk without knowing it, or that the pianist acquires the faculty of placing surely and unhesitatingly the finger upon the same key of the piano at the same instant in a long score. Diverse sensations, actual and revived, guide them, and the acts which they execute are so unconscious that they become irresistible, and continue until an effort of the will or an obstacle puts an end to them.

* * * * *

If the automatic execution of the most complicated movements, in appearance the most intentional, and of intellectual operations themselves, is in normal life of an appreciable assistance to us, so, to employ the expression of *Xavier de Maistre*, our mind has in "the other person" a servant always ready to execute the routine and subaltern occupations, while this keeps a high hand over that, and we can at our will bind or loose the "beast." It is otherwise in the degrees of somnambulism, which are comprised in the automatic series: the mind is absent, the "beast" is free, though drowsy, and every outside influence can lead it at will, provided only that kind of work is demanded which it is accustomed each day to accomplish. In the somnambulist automaton, in a word, every sensitive or sensory excitation will provoke the simple or complex movements which it would determine in the

waking state if the co-ordinating faculties did not prevent those which are useless or injurious; every sensation will be followed by the movement which would have given to the conscious mind that which Heidenhain calls intensive representation. But it is time to pass to the exposition of facts carrying us progressively from the more simple to the more complicated.

I. *Motor Automatism. — Neuro-Muscular Hyperexcitability.*—When spontaneously or under the influence of hypnogenic actions, the activity of the higher nervous centers is weakened, that of the lower ones augments, and it is only when hypnosis is complete and lethargy is obtained that the latter is completely abolished.

So, from the beginning of the invasion of the lethargy, but in certain subjects only, a light excitation of the muscles, tendons, nerves and certain cutaneous parts, brings into play the reflex power of the spinal cord and determines a slight and permanent contraction of the muscular masses which belong to the same diastaltic arc. When hypnosis is complete the same excitations awaken the spinal excito-motor power which is found much more active than in the waking state; and it is then that, all the other functions of relation continuing to sleep, the phenomenon is completely automatic. This is the phenomenon of neuro-muscular hypnotic hyperexcitability, noted elsewhere by A. Despine and well studied in these later times by Charcot, Richer, Brissaud, Richet, Heidenhain, Born, etc., etc.

The excitations which, in lethargics, arouse the reflex power of the cord, are direct or indirect, that is to say, they act upon the sensitive branches of the nerves which are distributed to the muscles whose contraction it is desired to excite, or upon sensitive branches which do not seem at first sight to affect any relation of connection with them. To the former belong the friction and the kneading of the muscles, the percussion of tendons, the pinching of nerves at the site which Richer calls the muscular points; the

mode of action of the second is less known, and it is to Heidenhain and to Born that we owe what we know of them.

In what consists the method of these excitations? It is as follows:

Goltz had remarked that a frog deprived of its cerebral hemispheres cried out when the skin of the back was lightly tickled between the shoulder blades, and that the tickling of the skin of the lumbar region of a dog whose spinal cord had been cut at the twelfth dorsal vertebra caused in this animal a movement of scratching executed by the hind foot of the corresponding side. It should be noted further that in certain individuals it suffices to place the finger upon the last cervical vertebra in order to cause a sonorous expiration like a groan or a sigh.

These facts, to which many others might be added, show that certain reflex acts, even complicated ones, may in subjects with an irritable spinal cord or with those in whom the controlling power of the brain has been destroyed, follow excitation of sensitive regions far removed and deprived of all direct connection with the muscular agents by which these acts are executed. It was then logical to think that the same phenomena would be produced in hypnotized subjects who present the most striking analogy to the frogs and dogs of Goltz. The experiments of Heidenhain and of Born, into the details of which it is impossible to enter, have justified this expectation; it is sufficient to cite one of them at random. The observations of Breslau, for example, have shown that by pressing the finger alternately upon each side of the lumbar spinal apophyses in a hypnotized subject, there may be produced a movement of recoil and abduction of each of the lower extremities alternately, so that it was possible by repeating these manœuvres to make the patient walk backwards, after the manner of a crab, according to the imaginative expression of the experimenters.

Whatever be the influence which causes it, the

reflex hypnotic contraction differs in no way by its form, its myographic characters and its electric reactions from every other contracture. M. Mendelssohn has recently shown that the period of latent excitation of the muscle, in the state of hypnotic contraction, was, as in every contracture, notably reduced, and that its duration might descend to over two-thousandths of a second, a result which is in accord with those which the same observer has obtained in the course of his researches upon the relation of the time lost by the muscles to its tonicity.

The energy and duration of the contracture are subordinate to the intensity and frequency of the excitations which produce it. A feeble and isolated excitation produces only a temporary contraction; more energetic and especially more frequent excitations are followed by a contracture sufficient to maintain the limbs for a long time in the position which they occupy at the moment when they have undergone contracture; the facial muscles are, however, an exception to this rule; in whatever manner they are excited, they never react, as M. Charcot has remarked, except by a simple contraction.

The place of excitation possesses likewise a great influence upon the localization and the distribution of the hypnotic contracture. If we touch with a rod a muscle or even a muscular fasicle, it contracts alone, as if we applied to its surface, with the necessary precautions to isolate the current, the electrodes of an induction apparatus. If we touch, on the other hand, a nerve, all the muscles which it innervates contract at once and we so obtain a cubital "*griffe*" by acting upon the nerve of that name, a median "*griffe*" if we excite the median nerve. It is again to M. Charcot that we owe these fine experiments.

The reflex contraction in those hypnotized follows then in the most absolute fashion, in its mode of distribution and of generalization, the well known laws which Pflueger has propounded and which Professor Chaveau

has verified in the higher animals. Heidenhain has made upon many persons, and notably upon his brother, the most conclusive experiments in regard to this. Let one rub, in a lethargic subject, the skin of the thenar eminence; the subjacent muscles will contract, and, if one continues the frictions, he will see contracture from below upward of the muscles of the upper limb; from above and downward those of the opposite upper limb; then, in the same order those of the lower limbs; finally, those of the jaw and neck. So one assists in the verification upon the living man of the laws of unilaterality, symmetry and generalization propounded by the German physiologist after his experiment by vivisection. There is no doubt, moreover, that the muscles of the trunk would undergo contracture in their turn, if the experiment were prolonged, but it would not be, perhaps, without danger, and Heidenhain recommends with special earnestness, not to exceed these limits.

Once produced and abandoned to itself the contracture persists for a considerable time, and may exceed the lethargy several hours, nineteen hours in one experiment of Heidenhain. It disappears gradually, but the least excitation suffices to re-establish it, and this with so much the more facility as it has been more frequently and more recently provoked. It is easy, moreover, to put an end to it by the aid of certain well-known empirical processes of the magnetizers: by energetic frictions, rapid movements imparted to the joints, or by the excitation of antagonistic muscles. Sometimes, moreover, at least in hysterical cases aroused in a cataleptic state, the contracture becomes permanent and its duration can no more be foreseen; the stimulation of the antagonists is then powerless to resolve it, and the only means of making it disappear is to plunge the patient again into the state of lethargy; it then resumes its old significance, and friction of the antagonists suffices to put an end to it.

Like most of the unilateral manifestations of hysteria, the hypnotic contracture localized to one limb can be

displaced by the esthesiogenic agents and transferred to the opposite side. A hysterical patient is hypnotized and the right arm contracted, *en griffe*, by excitation of the cubital. If we bring near to the left arm a magnet, we see, after two or three minutes, the muscles of the right arm relax in a certain order and the muscles of the left arm at the same time contract in an inverse order. To this experiment, due to M. Charcot Brissaud and Richet have added the experiment, still more curious, of the transfer of latent contracture. After having discovered that a limb bound with Esmarch's bandage, could not be brought into a state of contracture while the flow of the blood was suspended, they have shown that the approach of a magnet would determine a contracture of the opposite limb, while the limb primarily excited was still exsanguinated or when the circulation was re-established. It is useless to insist upon the physiological interest of this experiment.

It does not enter into our plan to dilate upon the diagnosis of hypnotic contracture. The slowness of its, appearance, its long duration, the neuro-muscular hyper-excitability which causes it and survives it, distinguish it from physiological reflex contractions. Richer has distinguished it with care from catalepsy whose characteristics are quite contrary to these: simulation finally would be easily detected by the graphic method, which would betray the muscular fatigue and respiratory anxiety of the simulator.

II. *Passive Somnambulistic Automatism*.—A decapitated animal and a somnambulist in a state of lethargy are physiological equivalents. The only difference which separates them is in the number and value of the faculties, which the first has lost without recovery and which can be, in the second, successively or simultaneously recalled to their full exercise.

Let us take a decapitated frog, or one deprived of its cerebral hemispheres, and pinch hard one of its feet, it raises itself up quickly to withdraw the limb disturbed by

the pain. Touch it with a drop of acetic acid: it rubs energetically the cauterized point with the corresponding upper extremity, and if this is prevented, with the opposite one. Place it in equilibrium upon one hand, and it remains immobile; but if we attempt to make it lose its seat, it clings on and executes prodigies of balancing in order to preserve it. Throw it into a trough of water, and it will swim vigorously until it reaches the end. If on the other hand, we leave the animal tranquilly upon the table, it will preserve the immobility of the sphinx, and allow itself to dry up with hunger before food which has been placed within its reach. Fleurens and many others have performed analogous experiments upon animals of a higher order, and we remember having seen M. Brown-Sequard quickly cut off the head of a fowl and throw it into the air where it spread its wings and flew about the hall for some minutes.

If the brain, as Descartes demonstrated long before Bichat and Fleurens, is the seat of conscious, active intelligence, our brained frog can neither feel the pinching, the loss of equilibrium, nor the contact of the water, nor wish to withdraw from the pain, the fall or the submersion. It acts however, as a normal frog would do in similar circumstances. It necessarily follows then that the excitation to which it has been subjected, caused in it automatically the muscular acts which have been often and long associated with them, which are consequently most useful and logical, which long repetition has admitted into the domain of organic memory, and has rendered instinctive and unconscious. This it is in fact which results and this is why we never see in a brainless frog the pinching of the foot cause a movement of swimming, or the contact of the water produce a movement of defence.

Matters go on absolutely the same with one hypnotized so long as the stimulations to which he is subjected are neither so prolonged nor so intense as to awaken wholly the suppressed functions of relation. Properly directed they

excite the classes of movements which correspond to them and give rise to the phenomena of motor inertia and suggestion, of automatic imitation and obedience, which, well studied, would be of the highest interest and of which we shall only give some examples.

We call motor inertia the phenomenon long and still displayed by the magnetizers, by virtue of which, the stimulation of the muscular sense determines an indefinite movement identical with that which, consciously and voluntarily executed, the same sensory excitation would have provoked. It is properly an act of reversion and a new proof of the identity of nature of biological and physical phenomena. If we move, for instance, the arm of a subject in a state of hypnosis, we see this member continue the movement which we have imparted to it. A somnambulist, lightly pushed forward or backward, may walk on indefinitely forward or back, and this is the means which the magnetizers use to show the attractive power with which they are endowed, and the repulsion which persons exercise upon their subject who have not been placed "*en rapport magnetique*" with them.

The motor suggestion determines in somnambulists, acts in relation with the sensitive or sensory impressions which have their point of departure therein. Many magnetizers, in repeating the experiments of attraction, of which we have just spoken, affect to avoid all contact with their subject; but their tread is not silent and the sound of their steps determines in the automaton the only movement capable of reproducing it fully. He then marches after his leader, pauses when he pauses, and follows him anew when he advances. Heidenhain excited in one of his subjects, movements of mastication, by executing behind him these same movements, but the experiment failed when the play of the jaw was quite silent.

Singular effects may result from the combination of motor suggestion with the reflex contracture of the muscles, and it is to Hansen that we owe the first idea of

experiments adapted to produce them: they are related rather to cases of specular imitation which differ a little, moreover, from those which we are studying at this moment. Heidenhain, in his public lessons, proposes a variation of these experiments which recalls the traditional course of FÜCHSE in the convention of German students: after having made the student sit upon a chair and having made him seize its feet with his hands, he hypnotizes him and contracts his arms in that position and begins to walk backwards behind him, making his steps sound.

We see then the student impelled to walk by the sound of the steps, follow his master backwards, bearing with him, as a snail his house, the chair which he firmly grasps.

Automatic imitation is a phenomenon very like that which we have just studied: it consists in the exact reproduction, executed by the patient, of sounds articulate or not, of sounds which strike his ear and of movements whose image is impressed upon his retina. Here the relation between the sensation and the movement, the action and reaction, is as simple as possible and the reversion is absolute.

The reproduction of sounds has received from A. Despine the name of *écholalie automatique*, and this excellent observer has presented the relations of phenomenality and causality which unite it to the *écholalie* of cerebral affections. Like certain ones affected with cerebral disease or certain insane there are those hypnotized who repeat all the words which we pronounce before them, in whatever language it be, some in a voice monotonous but strong; others whispering, pausing with the experimenter in the middle of a phrase, of a word, and resuming with him the interrupted phrase or word. Berger has verified and extended these experiments; he has determined that the echo subject reproduced every sound whatever it was.

It is far from being the case that *écholalie* is produced in all subjects, and we have ourselves determined it in a small number, but certain conditions whose mode of action

is still difficult to determine seem to favor its appearance. Berger recommends, in order to facilitate the experiments, to apply the warm hand upon the neck of the patient, or upon the spinous apophyses of the cervical vertebræ; but Heidenhain, while recognizing the utility of this manœuvre, accords no importance to the temperature of the hand. On the other hand, in order to be well repeated, the words should be pronounced, not, as we believe, before the face, the mouth or the ear of the subject, but opposite certain regions, of which the most favorable are the region of the larynx, that of the cervical spinous apophyses, and especially a part of the epigastric region extending two fingers wide from the point of the sternum about two inches down and as much to the right as to the left of the median line. The adjoining regions are, on the contrary, quite insensible.

A. Despine has given to the reproduction of movements the name of specular imitation, which perfectly takes account of the nature of the phenomenon. He had remarked that the eye of a subject hypnotized by the gaze followed all the movements of the eyes of his magnetizer. These experiments have been varied in a thousand ways. Hansen placed in the mouth of a patient a potato and executed before him movements of mastication: the subject ate the potato; he made believe strike a blow with his fist; the subject imitated him; he bent his arm in the position of a nurse lulling a child to sleep and imitated before him the motions of the nurse; the patient did the same and a doll completed the illusion.

Like all things the passive automatism of somnambulism presents degrees, and if we have for clearness of exposition made for it a place by itself and well defined in the hypnotic series, it does not follow that certain of these degrees cannot co-exist with a commencement of awaking of the faculties. This it is which clearly appears where we study the phenomena of automatic obedience characterized by this fact that the somnambulist executes automatically, without consciousness and without will all

the orders which are given to him. Heidenhain and Meyerssohn had, moreover, perfectly recognized that automatic obedience necessitates a degree of hypnosis inferior to that which the phenomena of suggestion need for their production, and inferior to that which renders possible automatic imitation.

Automatic obedience is only a particular case of co-ordinated reflex actions, evoked by sensory impressions; but here the act instead of being determined by the perception of a similar act or sensation which is adequate to it, is determined by the unconscious psychic impression which the order given determines.

In the normal state, when we receive an order which we are not accustomed to execute, from a person whom we are not habituated to obey, there is set up in us a struggle between the instinctive tendency to act, which the notion of the order produces, and our reason which discusses the justice and propriety of it. If on the other hand, the action which is prescribed for us is one of those which we execute daily, in the same circumstances, and if the person who imposes his will upon us, has authority over us, we obey without thinking of it, mechanically and almost without consciousness. The degree of hypnosis which we are studying, permitting the execution of acts which have passed into the state of organic memory and suppressing the play of the intellectual faculties, renders impossible in the hypnotized all discussion, all desire for resistance, and gives him over to the mercy of that one who has known how to deprive him of all liberty and all spontaneity.

To examine well, however, the phenomenon of automatic obedience, we discover here two orders of facts quite distinct, testifying of a different degree of hypnosis. Sometimes the subject executes passively the order which is given to him, whatever it be: sometimes, on the contrary, he hesitates and resists injunctions which are too manifestly contrary to his instincts and habitual desires. The first of these orders of facts only pertains to the passive

automatism which we are studying at the present moment; the second testifies an awakening of the intellectual faculties, indicates a half sleep of the judgment or of the will, and arises from one of the higher degrees of somnambulism, of which we have still to speak.

Passive somnambulistic obedience, well carried out, might have serious consequences. An automaton of this sort, at a word, would burn his rent-rolls and slay his father and mother. It has given, however, hitherto only pleasant or curious scenes. M. Ch. Richer tells of having forced one of his friends to throw upon the ground and pick up again as many as fifteen times, a piece of chalk. We have often made our subjects execute the most grotesque acts and those most contrary to their habits. It is a sport in such a case to humiliate the proud, and to prostrate those who do not even bow the knee before God. Heidenhain made upon his own brother an experiment of doubtful taste. Having hypnotized him before a numerous audience, he ordered him to take the scissors and cut off half his beard, which he had carefully trained for more than a year. The unfortunate young man awoke half-bearded, and it was not without some vexation, that he termed the pleasantry a little barbarous, although scientific, of which he had been the victim.

Poliomyelitis Anterior Acuta Infantilis— Essential Infantile Paralysis—The Rationale of its Treatment.*

By C. H. HUGHES, M. D., St. Louis,

Late Vice-President Section of Neurology and Psychiatry and Section of Physiology,
International Medical Congress.

THESE two names most clearly express both the pathology and distinguishing character of this unique malady. It is, as these names imply, an acute inflammation of the anterior gray horns of the spinal cord in infants—a true poliomyelitis, coming on suddenly or with little premonition, in infantile life, between the ages of four and forty-eight months.

A short initial febrile stage with precursory chill sometimes, but by no means always, characterizes its coming on. Sometimes a specific fever precedes it, especially an exanthem like scarlatina or measles, and I have known it to follow a typhoid fever of ten weeks' duration in a boy of three and a half years, syphilis in an infant of six months, diphtheria in several children of different ages, and in one instance to follow immediately after a fall down stairs, the child having been previously exposed to marked malarial influences, and in another child to proceed directly without previous fever of any kind, from the child lying, in hot weather, with its back to the cool hearthstone, and falling asleep in that position. Notwithstanding' no authority has so stated, I believe malarial influence and congestion of the spinal cord, coupled with an exciting cause, as of a spinal concussion, not sufficient to cause the disease without this influence, have much to do with the development of these sudden cases, in this latitude, which appear to come

* A paper announced but not read before the St. Louis Medical Society, at a meeting in July, prior to adjournment for the summer and pending the discussion of the subject.

on in those robust appearing children who so often surprise us by becoming suddenly its unfortunate victims.

These, and those cases associated with a previously entailed syphilis or acquired diphtheria, are the cases in which success in treatment has, in my experience, been uniformly gratifying.

These cases are in my judgment adneurial or extraneural in character, in which the anterior cornua are oppressed to the point of absolute inability to originate or send out motor impulses, by either adventitious depositions or congestion, and not by inherent atrophic degeneration of the anterior horns of the gray matter of the cord.

In fact, congestion and inflammation are the conditions of the gray cornua of the cord which are first to be combated in this disease, and this fact gives us the clue to the therapeutics we should adopt, and adopt promptly, in its management, if we would be successful in our results. The atrophic degeneration is a sequence of inflammatory destruction. This fact should give us hope and warning, and should inspire to prompt and vigorous combative, rather than to passive expectant treatment. I do not mean vigorous faradic stimulation, either peripheral or from center to periphery of the cord. They exhaust motor excitability at this stage, and the wrong kind of battery employed at this period becomes an engine of destruction rather than a conservator of power, and the latter is what we want as well as something to restore lost power. The only form of electrization at this early stage, when the anterior cornua of the cervical or lumbar enlargement of the cord are involved in congestion and inflammation, is the mild, descending galvanic (uninterrupted) current, sent down through the damaged segment of the cord, out through the channels of motor conduction to the terminal endings of the nerves in the atrophied, flabby and motionless muscles.

We must have a correct conception of the nature of this interesting disease to treat it rationally. To its nature

now, I further briefly invite your attention, and then to its rational and successful treatment.

Poliomyelitis anterior acuta infantilis is ordinarily an obscure, warm weather, infantile spinal disease, seldom coming on in winter or after the age of four years. It is as common among the robust as among sickly children; some authors think more so. It may follow dentition, scarlet fever, measles, typhoid, malarial or other fever, or a concussion or a traumatism. My own conviction is that any influence capable of developing inflammation and any cause capable of localizing such inflammation in the cord may produce it, and that there is more or less of a neuropathic tendency in all cases as a predetermining factor. I think both Gowers and Buzzard right in their seemingly paradoxical statements, the one being strongly impressed with its heredity, the other believing that "it is more common than not for the disease to attack fine grown hearty children, for neuropathic heredity generally does not materially impress itself in an apparent manner upon the nutrition or growth of infantile life."

Two cases will suffice to illustrate:

In the fall of 1880, little H. M., who lived from birth in the malarious atmosphere of Southern Illinois and the "Potomac Flats," D. C., in her fourth year fell down stairs. No bones were displaced or fractured. A few days afterwards pain in lumbar region of the spine appeared with fever, an initial chill, followed by inability to move the lower limbs.

The anal and vesicle sphincter functions continued to be normally performed.

Her physicians treated her without avail for several weeks and then sent her to me.

Under three-grain dose of quinine, and one of ergot four times a day, with hypophosphites, bromides, iodides, belladonna and the constant galvanic descending current, fifteen milliampères, ten-minute sésances twice daily, the recumbent posture and good nutrition, this child recovered so as to stand by a chair in four weeks. Peripheral faradism was then applied daily and the child walked with assistance, across the room at the end of the sixth week. In a few weeks more she was discharged, as recovered.

She has remained well ever since, and is now a remarkably healthy child, large for one of her age, and without the slightest deformity of limb. No faradic reaction could be obtained in any muscle but the tibialis anticus of the right leg and foot, and some galvanic reaction in the left. I treated the child on the hypothesis of latent malarial fever and consequent spinal congestion with anterior cornual inflammation. I think the facts and the sequel verify the diagnosis.

CASE II.—A young child, daughter of a well-known oculist and member of this society, at the age of about two years and eight months, during the hot days of August, being overheated, would lie down on the cool stone hearth and fall asleep. After one of her naps in this way, she was found to be paralyzed in her lower limbs, much like the preceding case, save that when brought to me for treatment, several weeks after the attack, she showed some spontaneous recovery of the right limb, the limb which, by the way, most often more or less recovers. The other limb was atrophied in nearly all of its flexor muscles, and there was reaction of degeneration. The child recovered, and is now doing well, many years after. The father is present, and can, if necessary, give fuller details of symptoms and treatment.

I have treated a number of cases that have not recovered. The one referred to as probably caused by typhoid fever has not; and I have known recovery to fail when I thought the cause was hereditary syphilis.

As we have said, poliomyelitis is in its nature inflammatory and congestive. The vasomotor mechanism, as in so many other diseases of the nervous system, is probably first stricken, though medical opinion is not concurrent as to whether the blood-vessels and connective tissue or the nerve elements are first affected.

This being an inflammatory disease, we feel safe in concluding and have conducted its therapeutic management upon the, to us, quite apparent fact that the vascular lesion is first and the structural is secondary or coincident, as Bramwell asserts. The immediate effect of this is to overwhelm the motor center of the cord; the ultimate

and not remote effect is the destruction of the multipolar nerve cells, "atrophy of the axis cylinder processes of the anterior root fibers," and, as a matter of course, and of pathological and physiological necessity, atrophy of the muscular nervous fibers nourished and innervated from the lumbar or cervical enlargements of the cord.

This gives us the indications for our treatment. The vascular riot of the cord is to be first and promptly subdued. The tumult of these tissue-destroying influences must be first of all promptly quieted, and whatever damage to the nerve elements then remains is then to be attended to. But we must first subdue the violence of the tumult, and then after the riot is quieted and the bloody rioters are driven out, the structural damage is to be repaired. We may be called to the rescue too late, and find only damage irreparable. There is undoubtedly danger in delay here, as in so many other diseases of the nervous system which are neglected or left expectantly to be outgrown. But how are we to know what we might do without trying? The reaction of regeneration does not make prognosis hopeless, for cases do recover after it appears.

If the reaction of degeneration means complete cor-nual atrophy, then new motor foci and channels of conduction are formed or function is established vicariously. But we need not infer destruction absolute, because function is lost and muscular atrophy follows. It may be only vascular or inflammatory product pressure, in some motor centers, and these are sometimes removed.

At all events, it is on this basis that we may have hope and success of cure in many of our cases. It is on this basis of its pathology that we urge prompt and persevering treatment; that we discountenance the plan of letting the child try to outgrow it. The child on the expectant plan usually grows out of it with talipes and limp wasted limbs. The only cases in our judgment that can by any possibility recover spontaneously are mild, exclusively congestive forms without muscular atrophy. They are the

forms that do best under treatment too, probably rewarding us most promptly and certainly.

The treatment now, if we are right in our pathology and understand precisely the powers of our therapeutic agencies, is obvious.

The form of electricity employed should be of the kind which soothes, does not irritate, does not excite the oppressed motor centers of the cord, but takes off the pressure by contracting its arterioles, diminishing the blood supply, controlling inflammation and removing inflammatory deposition. This is the constant galvanic descending current passed through the cord from damaged motor center to the affected periphery and none other. Later, when the damaged motor center can bear peripheral excitation, the faradic and the induced static may be wisely and usefully employed.

Now the ergot and the belladonna and the bromides, any time during the progress of the case, arsenic, and later when excitation with increased spinal circulation is tolerable, strychnia, but in the beginning only the very smallest doses of strychnia, if any, for vasomotor tonic purposes solely. We give very little strychnia at this stage. The same indication that calls for rest to the cord indicates abstention from large doses of strychnia, and from faradism.

If pain or fever be present, ether spray to spine, ice, gelseminum, aconite, antipyrine and the antiphlogistics internally.

Such in brief is the best outline therapeutics for the essential paralysis of children. All cases do not get well under it, but enough satisfactory recoveries occur under the present discouraging circumstances connected with the treatment of these little patients, to give us hope for a brighter future for them, when the family physician will either treat them promptly and correctly or send them to a neurologist who will take the necessary and timely pains with them. General medicine made nervous disease an opprobrium till neurology grew into a recognized specialty

and gave hope to thousands, as it has given to these little ones, who are too often left to the tender care of blind dame nature to grow up, in some instances I am sure, needlessly deformed.

ADDENDUM.—Resumé of Diagnostic Points.

1. Poliomyelitis is not progressive in character.
2. It is exclusively a motor trouble, sensibility not being affected.
3. The sphincters are not paralyzed.
4. There is no decubitus.
5. There is muscular atrophy often followed by contraction and deformity.
6. When complete it gives no response to faradic electricity.
7. Muscular response to galvanism or voltaic electricity gradually diminishes to end of first week, when it begins to rise and finally becomes exalted far beyond normal response as compared with healthy side.
8. Response to the poles is altered; normal response to negative and positive pole changes—anode loses, cathode gains in influence.
9. After thirty days galvano-muscular response fails decidedly.
10. Finally galvanism excites no response.
11. Paralysis in infants following a chill when the body is heated gives suspicion of poliomyelitis anterior.
12. The absence of anesthesia, of a characteristic decubitus, of paralysis of sphincters, distinguish it from acute central or transverse myelitis.

PROCEEDINGS

OF THE

FORTY-SECOND ANNUAL MEETING OF THE ASSOCIATION OF MEDICAL SUPERIN- TENDENTS OF AMERICAN INSTITU- TIONS FOR THE INSANE.

The Forty-Second Annual Meeting of the Association was called to order at 10.30 A. M. of Tuesday, May 15, 1888, at the Hygeia Hotel, Old Point Comfort, Virginia, by the Vice-President, Dr. John B. Chapin, in the absence of the President, Dr. Eugene Grissom.

The following members were present during the sessions :

J. B. ANDREWS, M. D., State Asylum for the Insane, Buffalo, New York.
T. S. ARMSTRONG, M. D., Asylum for the Chronic Insane, Binghamton, New York.

R. BARKSDALE, M. D., Central Lunatic Asylum, Petersburg, Virginia.

W. J. BLAND, M. D., Hospital for the Insane, Weston, West Virginia.

G. ALDER BLUMER, M. D., State Lunatic Asylum, Utica, New York.

JOHN H. CALLENDER, M. D., Hospital for the Insane, Nashville, Tenn.

WALTER CHANNING, M. D., Brookline, Massachusetts.

H. F. CARRIEL, M. D., Central Hospital for the Insane, Jacksonville, Illinois.

JOHN B. CHAPIN, M. D., Pennsylvania Hospital for the Insane, Philadelphia, Pennsylvania.

F. H. CLARKE, M. D., Eastern Lunatic Asylum, Lexington, Kentucky.

GEO. F. COOK, M. D., Oxford Retreat, Oxford, Ohio.

JOHN CURWEN, M. D., State Hospital for the Insane, Warren, Penn.

RICHARD DEWEY, M. D., Eastern Hospital for the Insane, Kankakee, Ill.

ORPHEUS EVERTS, M. D., Cincinnati Sanitarium, College Hill, Ohio.

THEO. W. FISHER, M. D., Lunatic Hospital, Boston, Massachusetts.

THOS. S. GALBRAITH, M. D., Hospital for the Insane, Indianapolis, Ind.

J. Z. GERHARD, M. D., Pennsylvania State Lunatic Hospital, Harrisburg, Pennsylvania.

H. A. GILMAN, M. D., Hospital for the Insane, Mt. Pleasant, Iowa.

S. A. M. GIVEN, M. D., Burn Brae, Clifton Heights, Pennsylvania.

W. W. GODDING, M. D., Government Hospital for the Insane, Washington, District of Columbia.

- P. E. GRIFFIN, M. D., Lunatic Asylum, Columbia, South Carolina.
 R. GUNDRY, M. D., Maryland Hospital, Catonsville, Maryland.
 JOHN C. HALL, M. D., Friends' Asylum for the Insane, Frankford, Pennsylvania.
 G. H. HILL, M. D., Hospital for the Insane, Independence, Iowa.
 CHARLES G. HILL, M. D., Mount Hope Retreat, Baltimore, Maryland.
 L. S. HINCKLEY, M. D., Essex Co. Lunatic Asylum, Newark, New Jersey.
 P. O. HOOPER, M. D., State Lunatic Asylum, Little Rock, Arkansas.
 E. H. HOWARD, M. D., Monroe County Insane Asylum, Rochester, New York.
 HENRY M. HURD, M. D. Eastern Michigan Asylum, Pontiac, Michigan.
 H. A. HUTCHINSON, M. D., Western Pennsylvania Hospital for the Insane, Dixmont, Pennsylvania.
 J. G. JOHNSON, M. D., St. Joseph's Retreat for the Insane, Dearborn, Michigan.
 W. M. KNAPP, M. D., Hospital for the Insane, Lincoln, Nebraska.
 EDWIN A. KILBOURNE, M. D., Northern Hospital for the Insane, Elgin, Illinois.
 WALTER R. LANGDON, M. D., Assistant Physician, State Insane Asylum, Stockton, California.
 J. F. MILLER, M. D., Eastern N. C. Insane Asylum, Goldsboro, North Carolina.
 J. D. MONCURE, M. D., Eastern Lunatic Asylum, Williamsburg, Virginia.
 P. L. MURPHY, M. D., Western N. C. Insane Asylum, Morganon, North Carolina.
 CHARLES H. NICHOLS, M. D., Bloomingdale Asylum, New York City.
 N. EMMONS PAINE, M. D., Insane Hospital, Westborough, Massachusetts.
 GEO. C. PALMER, M. D., Asylum for the Insane, Kalamazoo, Michigan.
 JOHN G. PARK, M. D., Lunatic Hospital, Worcester, Massachusetts.
 T. O. POWELL, M. D., Lunatic Asylum, Milledgeville, Georgia.
 H. M. QUINBY, M. D., Insane Asylum, Worcester Massachusetts.
 A. B. RICHARDSON, M. D., Asylum for the Insane, Athens, Ohio.
 W. R. RODES, M. D., State Lunatic Asylum, No. 1, Fulton, Missouri.
 IRA RUSSELL, M. D., Family Home, Winchendon, Massachusetts.
 HENRY P. STEARNS, M. D., Retreat for the Insane, Hartford, Connecticut.
 J. T. STEEVES, M. D., Provincial Lunatic Asylum, St. John, New Brunswick.
 SELDEN H. TALCOTT, M. D., State Lunatic Asylum, Middletown, New York.
 H. A. TOBEY, M. D., Asylum for the Insane, Toledo, Ohio.
 GEORGE T. TUTTLE, M. D., Assistant Physician, McLean Asylum, Somerville, Massachusetts.
 GEO. B. TWITCHELL, M. D., Private Asylum, Keene, New Hampshire.
 P. M. WISE, M. D., Willard Asylum for the Insane, Willard, New York.
 R. E. YOUNG, M. D., State Lunatic Asylum, No 3. Nevada, Missouri.

The minutes of the last meeting were read and approved.

DR. CURWEN: Mr. President—I have been for thirty-seven years a member of this Association, and have missed two meetings. Thirty years ago the Association elected me its Secretary. I beg now to tender to the Association my resignation of that office, and thank them for the kind and courteous manner in which they have treated me, as their Secretary.

DR. GUNDRY: I do hope that our good friend, Dr. Curwen, will withdraw that. I know it is the sentiment of those around me, and that it is so especially with the older members of the body, who have longest had the experience of his faithful services, I am sure I speak without exaggeration, when I say that we cannot find a member who will do as well as the present Secretary of our Association. There is no man who can sit at the table and record as faithfully the proceedings of this Association. I do not know what we will do if he persists in his resolution to resign. I repeat that I do earnestly hope he will reconsider that, for I am sure I speak the sentiments of all whom I know, especially the older members, in the very sincere appreciation of his duties in the interests of this Association. I am certain that we shall not get anybody that can do the work that Dr. Curwen has done. The success of our meetings has been very largely due to his exertions. While he has been doing his work quietly, thoroughly and unostentatiously, I feel confident we will all know, when he has declined, how much we are indebted to him; and I do repeat again my earnest hope that he will not persist in his resolution to resign.

DR. GODDING: I rise to express my feelings of regret relative to Dr. Curwen's resignation. I feel that those members who have known Dr. Curwen through all these years, would find it a personal bereavement to lose him from the position of Secretary. I am aware that the work is onerous, and that it is almost a thankless task; yet, at the same time, we all have to make sacrifices, and the Doctor has been so much in the way of making sacrifices that he would feel lost without doing so. I do hope he will withdraw his resignation.

DR. CURWEN: If the members insist, why of course, I will withdraw my resignation.

DR. EVERTS: They insist!

The Secretary read letters from Drs. Stedman and Hughes, expressing their regret that they were not able to attend this meeting of the Association.

The following gentlemen were invited to take seats with the Association:

Dr. H. M. Lash, Trustee of the Asylum for the Insane, Athens, Ohio; Hon. J. B. Thomas, Treasurer of the Willard Asylum; Mr. G. N. Parmlee, Trustee of the State Hospital for the Insane, Warren, Penn.; Dr. A. J. Ourt, Secretary of the Commission on Lunacy, of Pennsylvania; Dr. A. O. Gilman, St. Cloud, Minn.; Dr. Gurdon W.

Russell, Manager of the Retreat for the Insane, Hartford, Conn.; Mr. A. G. Bullock, Trustee of the Lunatic Hospital at Worcester, Mass.; Dr. Perkins, of Bridgeton, Maine.

On motion of Dr. Andrews, it was

Resolved, That the members of the Medical Staff of the Army and Navy, that are located in this vicinity, and also all local physicians, be tendered the courtesy of the Association, and that the Secretary be directed to convey to them this invitation.

Dr. John Brooke and Dr. George H. Torney, U. S. A., were present during the sessions.

Dr. Godding, from the Committee on Business, made the following report:

REPORT OF COMMITTEE ON BUSINESS.

The Committee on Business report the following order of business after this morning session :

A paper on "Traumatic Insanities and Recoveries," by Dr. S. H. Talcott, of New York.

A paper on the "Relation of Tuberculosis to Insanity," by Dr. J. T. Steeves, of New Brunswick.

Discussion of papers.

EVENING SESSION.

A paper on "Paranoia as Related to Hallucinations," by Dr. Theo. W. Fisher, of Massachusetts; "Imbecility and Insanity," by Dr. H. M. Hurd, of Michigan.

Discussion of papers.

WEDNESDAY, MAY 16.—MORNING SESSION.

"A Medico-Legal Case," by Dr. J. B. Andrews, of New York; "The Codman Will Case," by Dr. W. Channing, of Massachusetts; "A Judicial Advance—The Daly Case," by Dr. W. W. Godding, of District of Columbia.

Discussion of papers.

At 12 M. the Association will visit the Hampton Home for Disabled Volunteer Soldiers, and the Normal School for Indians, taking omnibus from the hotel.

EVENING SESSION.

"Practical Working of General Dining Rooms for Disturbed Insane," by Dr. A. B. Richardson, of Ohio; "Proper Size of State Institutions for the Insane," by Dr. R. Dewey, of Illinois; "A Plea for Better Knowledge of the Insane by the General Practitioner," by Dr. Chas. G. Hill, of Maryland.

Discussion of papers.

THURSDAY, MAY 17TH.

The Association will take the train (a special car being provided for the members and their ladies) at 7.50 A. M., leaving the hotel at 7 30 A. M. sharp, to visit the Hospital at Williamsburg. A session will be held in the institution, for the discussion of the report on the "Propositions." Letters on the subject from absent members will be read and general discussion follow. The Association will return to the Hygeia at 6 P. M.

EVENING SESSION.—OBITUARY NOTICES.

Dr. Wm. B. Goldsmith.—Dr. Charles H. Nichols, of New York.

Dr. F. H. Roy.—Dr. Daniel Clark, of Ontario.

Miss D. L. Dix.—Dr. John B. Chapin, of Penn.

Remarks from other members.

Adjourn.

FRIDAY, MAY 18TH.—MORNING SESSION.

"The Recruiting Grounds of Insane Asylums"—Dr. Ira Russell, of Mass.; "Tact in the Treatment of Insanity"—Dr. A. B. Richardson, of Ohio; "Training and Retention of Attendants"—Dr. Geo. C. Palmer, of Michigan.

Discussion of papers.

AFTERNOON SESSION.

Reading of any remaining papers and discussion of the same.

Report of the Committee on Resolutions.

Adjourn.

Dr. Chapin announced the following committees:

ON TIME AND PLACE OF NEXT MEETING—Drs. Fisher, of Massachusetts; Bland, of West Virginia, and Steeves, of New Brunswick.

ON RESOLUTIONS—Drs. Callender, of Tennessee; Hooper of Arkansas, and Blumer, of New York.

TO AUDIT THE ACCOUNT OF THE TREASURER—Drs. Gerhard, of Pennsylvania; Gilman, of Iowa, and Hurd, of Michigan.

Dr Everts, from the Committee on the "Propositions," made the following report:

To the President and Members of the Association:

Your committee to whom was assigned the duty of reviewing the "official utterances" of this Association, known as its "Propositions," and to ascertain what, if any, progress has been made since its organization, beg leave to report as follows, namely:

The "Propositions" of this Association, as collected and published in 1876, by a committee appointed for that purpose, since when no new propositions have been adopted, embrace a variety of subjects pertaining to the care and treatment of the insane.

The subjects that seem to have been regarded as of the greatest importance, however, were—as indicated by the “Propositions”—Public Provision—Hospital Construction—Hospital Organization—Management and Treatment—and Legal Relations, of the Insane, including Inebriates.

Historically considered, these “Propositions”—in all but one notable instance—were adopted “unanimously.” How many members were present and voting at any given time of their adoption, except in the one instance alluded to, does not appear of record.

It is worthy of remark, also, that nearly all of the “Propositions,” as adopted, were formulated by, and reflect the personality of, two of the original thirteen members of the Association, whose names and features will never be forgotten by those who knew them—DR. THOMAS S. KIRKBRIDE and DR. ISAAC RAY.

Chronologically considered, the adoption of these “Propositions” began with the first meeting of the Association, 1844, and continued, with intervals, until 1875. The first official “utterance” was on the subject of personal restraint of the insane. The last was on the subjects of general principles—the management of the insane; and public provision for inebriates.

Elaborate propositions, extending to sixteen sections, relating to the construction of hospitals for the insane, embodying what is known as the “Kirkbride plan,” were adopted in 1851. Equally elaborate propositions relating to the organization of hospitals for the insane were adopted in 1853. On the care of the chronic and other classes of insane persons, resolutions were adopted in 1866. A comprehensive “project of a law” covering all of the legal relations, or interests, of the insane—the work of Dr. Isaac Ray—was adopted in 1868. Former declarations in regard to the construction and organization of hospitals for the insane were “reaffirmed” in 1871, and again in 1874. In 1875 a series of resolutions respecting the management of hospitals for the insane was adopted. Meanwhile—it may be thought worthy of remark—the membership in attendance at the annual meetings of the Association had increased, from the original thirteen to about forty.

Presuming the present members of the Association to be familiar with these “Propositions,” reference to their more important features, a consideration of which is essential to present purposes, will, only, be made, omitting the great body of now commonplace truisms, that are no longer, if they ever were, subject to criticism.

The positions occupied by the Association, as indicated by these official “utterances,” made from time to time, may be briefly stated as follows, namely:

It is the duty of every, State, or community, to make public provision for the insane of all classes, and for inebriates.

Public provision for the insane of all classes should consist of public buildings, located with reference to public necessities for the accommodation of the greatest number of people interested, and officered by *physicians* exclusively as superintendents, under the general supervision of boards of trustees. All public buildings for the care and treatment of the insane should be constructed upon the general principle of association of all

classes—except the criminal—and should consist each of a centre building for administrative purposes, and wings extending in line, or *en echelon*, furnishing accommodation for two hundred and fifty patients, in eight wards for each sex, each ward consisting of a corridor with rooms for patients and attendants, dining, bathing and other purposes, opening from either one or both sides, lighted, warmed, ventilated, etc., etc.

The limitation of capacity of proposed hospitals for the insane to two hundred and fifty beds for patients, as adopted “unanimously” in 1851, was extended by a vote of nine to five, to a permissible accommodation of six hundred, in 1866.

Respecting separate provision for different classes of the insane, the ‘Propositions’ emphatically declare, “that neither humanity, economy, nor expediency can make it desirable that the care of the recent and chronic insane should be in separate institutions.”

Respecting restraints—meaning evidently, the use of mechanical restraints—the Association said in 1844, at its first meeting, “The attempt to abandon entirely the use of all means of personal restraint is not sanctioned by the true interests of the insane.”

Respecting the “legal relations” of the insane, Dr. Ray’s elaborate “project of a law” is memorable only because of one or two features. One, that provides for the appointment by judges, of juries composed entirely of physicians, one of whom, for each jury, if practicable, shall be an expert in insanity, to settle the question of competency for trial of persons accused of crime, but pleading insanity as an excuse; and another, making it obligatory *on the part of the prosecution to prove that the criminal acts of an insane person on trial for crime were not the result of insanity, direct or indirect*, in order to establish any degree of responsibility for such acts.

The Association disapproved of the admission of insane criminals, or inebriates, to the hospitals occupied by other classes of insane persons; but urgently recommended public provision for them both as separate classes.

From some of the positions occupied by the Association, as indicated by the “Propositions” under consideration, your committee has reason for believing that notable departures have been taken, and now, for the purpose of indicating the direction in which the Association has been, and is, moving, and to establish a permanent landmark of positions now occupied, your committee, craving indulgence in behalf of its shortcomings in the performance of duty, beg leave to offer, in a spirit of suggestiveness, rather than of dictation, the following resolutions:

ON PUBLIC PROVISION FOR THE INSANE.

1. *Resolved*, That Christian sentiment suggests, and social science justifies, public provision for the custody, maintenance, and treatment of all insane persons not otherwise properly provided for.

2. *Resolved*, That economy, humanity, and the wisdom of experience, suggest the propriety of separate, and characteristically different provision for different classes of insane persons. As for example: Hospitals proper for the class still suffering acute or active disease; asylums or homes for the class permanently impaired by disease in abeyance or recovered from; training schools for the naturally defective, etc., etc.

ON HOSPITAL AND ASYLUM CONSTRUCTION.

1. *Resolved*, That all hospitals for the insane, as distinguished from asylums or homes, should be located with reference to the accommodation of the public; and constructed with reference to, not only discreet classification of patients according to conditions and manifestations, but individual treatment of persons suffering from acute disease; hence compactly presenting numerous small wards, with all the necessary appurtenances of modern hospitals, and a few rooms *en suite* for cases requiring special nurses—in addition to an administrative department that should be commodious, and form a part of the general structure, readily accessible from all other parts. The whole to be substantial, fire-proof, attractive and impressive in appearance, in the midst of agreeable surroundings.

2. *Resolved*, That asylums proper, or homes for the accommodation of the class who no longer require individualized treatment or restraint (many of whom are capable, under direction and authority, of productive labor), as distinguished from hospitals for the insane, may, and should be, constructed with reference to uses; and being designed to furnish wholesome, secure, comfortable, economical quarters for the accommodation of the large numbers of more or less dependent permanently impaired persons of both sexes, still capable of some appreciation and enjoyment of personal liberty, and the amenities of civilized life—the structures constituting them may be detached, isolated or in groups; and diversified in appearance, capacity and internal arrangements, to any degree consistent with the exigencies of administration and the industrial occupation of the people accommodated; provided always, that such structures should be near by, and associated with hospitals for the insane; or buildings constructed for the purpose of asylum infirmaries, fully equipped for the reception, and temporary custody and treatment, of asylum inmates subject to recurrence of diseased activities, and requiring temporary restraint or medication.

3. *Resolved*, That the construction of buildings for the custody and treatment of insane criminals should be in accordance with the general principle of adapting mechanisms to uses, and should embrace hospital, asylum and prison features combined.

ORGANIZATION OF HOSPITALS AND ASYLUMS.

1. *Resolved*, That all hospitals and asylums for the insane should be organized by the appointment, on the part of the State of a Board of Trustees for each; such boards to consist of not less than five members each, authorized and required to select and appoint a suitable person for Superintendent, or chief executive officer of the institution intrusted to their care and supervision. That the Superintendent thus selected and appointed, should be authorized and required to select and nominate for appointment by the Board of Trustees, all subordinate officers required or allowed by law; and to direct the employment and discharge of all necessary attendants, artisans, and laborers; to fix and adjust the wages of each, not to exceed in aggregation the amount provided for salaries and wages by the proper authorities for a given time; to direct, as to quantity and quality, the purchase of all supplies, and the disposition of the same;

to direct the general management and treatment of the population of the institution, professionally, disciplinarily, and industrially, under the general supervision, and with the approbation of the trustees.

2. *Resolved*, That all members of the boards of trustees for all hospitals and asylums for the insane, should be persons, however appointed, free from the influence of political partisan obligation in the discharge of their duties; reputable for sound morality, business capacity, and general interest in public affairs; and the welfare of their fellows, socially and individually considered.

3. *Resolved*, That all superintendents of hospitals for the insane should be physicians, thoroughly educated in the sciences, and experimentally successful practitioners of medicine, of more than neighborhood reputation. They should be persons of broad general culture and characteristics, free from eccentricities or instabilities of feeling, thought, or habits; and otherwise qualified to govern men, sane or insane, by natural intellectual superiority, and more comprehensive acquirements; including knowledge of the natural, as well as the political history of mankind.

4. *Resolved*, That while it is not indispensable to the successful management of asylums, and training schools, for the chronic and naturally defective classes of the insane, that their chief executive officers should be physicians (needful medical service being provided for and at command); still, other things being equal, physicians should be preferred for such offices, always.

5. *Resolved*, That the tenure of office of the members of all boards of trustees of institutions for the insane should be such that at no time after the primary organization of the board, could a majority of inexperienced persons be seated as members in regular order of succession. Also, that the tenure of office of all professional appointees should be during successful and reputable discharge of duties to which they may have been assigned.

6. *Resolved*, That the salaries of trustees of all institutions for the insane—if salaried officers should be sufficient to dignify the service, and that the salaries of all professional appointees, should be sufficient to relieve such officers from pecuniary anxiety or the necessity of devoting time and energy to objects not germane to official duties.

7. *Resolved*, That an inspector of institutions for the insane and other defective classes of society, should be appointed by the State, in every State where more than one institution of the kind exists, with duties and powers limited to general inspections, at will, of such institutions; and official reports of the same; the object of such inspections and reports being a diffusion of useful knowledge from official sources, commanding public confidence, respecting the condition, management, and uses of such institutions; for the protection of their reputation and the satisfaction of the people maintaining them. That such inspectors should be persons of reputation, well-informed, of liberal sentiments, and broad views of men and affairs; having neither the airs, infirmities, nor intellectual limitations of professional “reformers,” “agitators,” or “philanthropists.” That the tenure of office of such inspectors should be that of “professional” appointees, with salaries attached.

CARE AND TREATMENT.

1. *Resolved*, That no inelastic system, or prescribed rules not subject to modification by unforeseen circumstances, should be imposed upon the administrative officers of institutions for the insane by superior authority, or at the dictation of immature public sentiment. That such officers, if qualified for their positions may be trusted to adopt whatever is really valuable of all that is new, and to grow with the general growth of the people and the profession in knowledge and capabilities. The movements of the strong are steady and persistent—the weak are impulsive and inconstant.

2. *Resolved*, That the care and treatment of insane persons whose manifestations of mental disorder are concomitant with active disease of brain or other organs, recognized or implied, should be, as far as practicable, individualized; and as distinctly different from that required and appropriate for the insane whose manifestations of impairment are sequential—the result of disease no longer active or imminent—as the treatment of wounded soldiers fresh from the field of battle is different from that required and appropriate for the same soldiers after recovery with deformities; in the one instance requiring surgery—in the other crutches only.

3. *Resolved*, That this Association regards with interest and favor all well-directed experimental efforts on the part of individuals or States to provide more appropriate or economical accommodations for the insane, but reserves expression of opinions respecting such efforts as are now attracting deserved attention in this country for further development and consideration.

LEGAL RELATIONS OF THE INSANE.

1. *Resolved*, That the legal status of all insane persons committed to public institutions for custody, maintenance, or treatment, by law, should be that of *wards of courts*. That all primary court proceedings relating to the same should ultimate in the appointment of guardians for such persons, who, as responsible officers of the courts appointing them, should be authorized to take all further necessary steps for the proper disposition of such persons; subject always to the approval of the courts having jurisdiction over them.

2. *Resolved*, That the legal status of all insane criminals in courts of law should be that of *minors*—whose responsibility for crime should be measured by degrees corresponding to their mental capabilities—their knowledge of the relation of acts to consequences—and their powers of self-control—as affected by disease.

3. *Resolved*, That the doctrine that any and every degree of deterioration, or impairment, of mental capabilities by disease is, and should be accepted by the courts as, an “unconditional excuse for crime,” implying exemption from punishment, is not justified by any scientific principles known to us, nor by our knowledge of the natural history of men.

4. *Resolved*, That in all legal proceedings, when insanity is pleaded as an excuse for crime, or in arrest of proceedings, it should be incumbent

upon the parties pleading to prove that the criminal acts complained of were without rational motives; meaning thereby such motives as impel ordinary criminals to such acts; and that the acts themselves were so inconsistent with the characteristics and habits of the accused when in health as "to be accounted for upon no other hypothesis than that of disease;" in order to establish the incompetency for trial or punishment of the accused.

PROVISION FOR INEBRIATES.

1. *Resolved*, That periodical drunkards, sometimes called "dipsomaniacs," and all other persons who by reason of constitutional defects, or impairment by the use of intoxicants of any kind, are incapable of refraining from intoxication voluntarily, should be regarded and treated as "persons of unsound mind"—and provided for by public institutions organized and constructed in accordance with the same general principles that should control in the organization and construction of all other institutions for the defective classes, viz., adaptation to necessities and uses.

2. *Resolved*, That such institutions should furnish comfortable homes, perfect security, and profitable employment for all persons committed to them; with such hospital provision as may be needed for the infirm.

3. *Resolved*, That commitments to homes for inebriates should be either voluntary, on application of the party desiring commitment; or compulsory, on application of friends or complaint of other parties, in accordance with law—such commitments to be for definite periods, and subject to repetition, for increased terms succeeding any relapse into former habits of intoxication.

In formulating these resolutions—your committee beg leave to add—your committee were not unmindful, as this Association will never be, of the great respect due, and spontaneously accorded, to the memory of those sincere, earnest and intelligent men who are entitled to the rank of "fathers" in our specialty; nor yet unconscious of the sentimental barrier that human veneration for ancestors, and things ancient, forever interposes for the restraint of human growth. Nor have they, while recognizing the fact that the Association has made but little real progress in but little less than half a century,—in mitigation of disappointment, forgotten the fact that human growth, at best, is but slow;—that present attainments of the race have been reached through an ageless occupation of the earth, and a continuity of movements that stars have grown old and died while watching.

Respectfully submitted,

ORPHEUS EVERTS, M. D., *Chairman*.

FOSTER PRATT, M. D.

DR. CHAPIN: The Association has heard the report of the Committee on Propositions. What disposition shall now be made of this report?

DR. EVERTS: I move that it be laid on the table for the present.

DR. GODDING: It seems to me eminently proper that the Association should have an opportunity of studying these resolutions a little. The programme laid down in the report of the Committee of Arrangements provides for discussion on Thursday.

Dr. GUNDRY: Mr. President—Before we proceed further, let us understand what we are doing. The presentation of this report, as embodying the views of Dr. Everts, is one thing; but the adoption of the resolutions founded on the report, as the sentiment of this Association, is another thing; and I give notice, without explaining why at this time, that I will oppose giving consent, in official form, to any doctrine connected with the treatment of insanity, believing as I do that creeds are harmful and that we are always trying to explain them away, after formally adopting them. I shall oppose their adoption as being considered an expression of this body of alienists of America.

Thirteen gentlemen founded this Association, of whom only two are now living. The Association has increased in membership until we now number over one hundred members. The original thirteen thought proper to adopt certain propositions. Some of these have been modified from time to time; now it is proposed to adopt other very important propositions. I merely give notice of the position I shall take.

On motion the report was received and the accompanying resolutions were laid on the table for the present.

The President called to the chair Dr. Everts, who appointed the following:

COMMITTEE ON NOMINATIONS.—Drs. Stearns, of Connecticut, Hurd, of Michigan, and Barksdale, of Virginia.

A recess of twenty minutes was then taken to enable the members to register.

On re-assembling Dr. Chapin called to the chair Dr. C. H. Nichols.

Dr. Stearns, from the Committee on Nominations, reported that they had agreed to report for President, Dr. John B. Chapin, of Pennsylvania; Vice-President, Dr. W. W. Godding, of District of Columbia.

The report was accepted and the nominations unanimously confirmed.

On motion of Dr. Godding the Association adjourned to meet at 3.30 P. M.

The Association was called to order at 3.30 P. M. by Dr. Chapin, the President, who said:

Gentlemen of the Association—Before commencing the regular order, I ask your indulgence for a few moments.

In the year 1852 this Association convened in the city of New York,

where I was then engaged in the study of medicine. Attending its sessions, I was impressed with the great scope of its work, the earnestness and intelligence of its members. Of the whole number then in attendance but two are now present. It then seemed it might be a worthy ambition to be enrolled in its membership. That privilege, with all its opportunities, I have enjoyed for several years, and would have been contented with the advantages afforded by a membership of this body,—but how can I make a suitable acknowledgement for the honor you have conferred by your action in electing me as your President? I tender to you my profound thanks.

To be selected to occupy a position that has been filled with distinction and credit by the long line of my distinguished predecessors, is an honor which cannot be declined, but is accepted with hesitation and diffidence.

The work which the founders of this Association sought to accomplish through its organization has been conducted for a period of forty-six years, with wide-reaching results. At the period of its creation the whole number of insane in the country did not, probably, much exceed sixteen thousand. At this time it approximates one hundred thousand, fifty thousand of whom are cared for in organized asylums and hospitals. The plant connected with these institutions has required an expenditure of fifty million dollars, and the amount necessary for their annual support does not fall short of ten million dollars. Fifteen thousand new cases of insanity occur annually.

The great variety of interests and social problems concerned; the best methods of medical treatment and management of the insane; the plans of asylums for their care; details of administration; the study of preventive measures; the medico-legal relations of the insane; the financial questions involved, have severally received the consideration of this body from time to time, and it is safe to assume that not a day passes but the members of this Association are engaged individually, in their own way, in solving some of these complex subjects.

It may be a proper subject of pride that the legislation of the several States and British Provinces, the advances and elevation of the care of the insane and their improved treatment, have all been largely if not mainly due to the influence of the members of this Association; and that the management of the asylums for the insane are, to-day, the best models of honest and faithful administration which the States and Provinces furnish.

Important questions pertaining to our principles and policy, so far as we may feel warranted in enunciating them, may be presented for your consideration during the present session, which we shall hope will be wisely acted upon. While it has not been considered essential for the purposes of our Association that we should be governed by a written constitution, and experience has shown that it has not been necessary to add materially to the few resolutions that form the basis of our organic existence, yet the question has occurred whether the time has not arrived when in addition to the usual standing committees there should be created a *Council*, composed of three of the senior ex-presidents and two members of the Association, to whom may be appropriately referred nominations

of honorary members, questions pertaining to the policy and organization of the Association, the roll of membership, and of discipline if any such should arise.

Trusting that the session upon which we have entered will tend to promote the great interests in which we are engaged, and that it will prove socially agreeable, I will ask your indulgence in the performance of the duties upon which I now enter.

Dr. Talcott then read a paper on "Traumatic Insanities and Recoveries."

Dr. Steeves followed with a paper on "The Relation of Tuberculosis to Insanity."

After some remarks in regard to the order of discussion of the different papers the President said:

The discussion of the two papers is now in order, and in their order the subject presented by Dr. Talcott, in his paper, is now before you.

DR. FISHER (after some time): If no one else cares to discuss this paper I will say a word. The paper was a very interesting one to me. The cases are undoubtedly somewhat rare, as Dr. Talcott has said. On looking over the statistics of the Boston Lunatic Hospital for the last five years, recently, I found a traumatic origin assigned in only about two per cent. of the admissions. The last three cases which I have in mind were cases of very different form from Dr. Talcott's, and, unfortunately, resulted unfavorably, whereas all his recovered. They were all cases of dementia, and suffered injury of the head without fracturing the skull, resulting in severe concussion only. One of these patients, some time after the injury, experienced two or three epileptic attacks, followed by primary dementia of extreme form, and is in that condition still. The other two cases resulted in death, one of them going on to gradually increasing dementia and physical weakness, with death from exhaustion by a very slow extinction of mental and physical powers, including aphasia in its course. The other one, before coming to the hospital, had been trephined over the seat of the injury, but not because of any depression or fracture. It was supposed there might be a fracture of the internal table, but that was not found. The membranes were not incised, as perhaps should have been done, and the wound was closed up. The aphasia and dementia, which were partial at that time, became worse at the time of the operation and gradually increased until the patient died, when an autopsy was made but no local injury whatever was found. The membranes were perfectly healthy; the button of bone had been restored with perfect accuracy so that there was scarcely any trace of it. The insanity must have resulted entirely from the effects of concussion. The feasibility of treating insanity by concussion strikes me as rather doubtful. I do not know whether Dr. Talcott recommends this treatment in traumatic cases especially, or in all cases of insanity.

DR. HILL: My experience accords with Dr. Fisher's in regard to the insanity being caused by reason of severe injuries to the head. That is,

I have seldom admitted patients who have recently received severe injuries to the head, but in gathering up all the history possible from the relatives of patients, it is not unusual for them to tell me that the patient received an injury to the head when a child, or at some time during life. Oftentimes these injuries were not severe, and did not produce unconsciousness. Sometimes the patient was unconscious for a while, or may have remained in bed for twenty-four hours. The question is oftentimes suggested to my mind, as to whether a severe injury of the brain would produce insanity several years after the injury had been received, if there were no serious head symptoms or mental symptoms at the time of the injury.

I thought the Doctor related to the traumatic injuries of the brain, and injuries of the brain from sunstroke. I do not remember exactly the expression he used, but I will take the opportunity of saying that I am quite sure there is a limited number of patients whose insanity is caused by sunstroke, with symptoms very much like those described by the Doctor in the patient at the Hot Springs, who was easily frightened. My experience is that those patients whose insanity was caused by sunstroke are generally timid. They are morbidly in fear that they will be condemned, or that some serious thing is going to happen to them. They do not seem to have a clearly defined delusion, but rather an irresistible feeling; that is, they oftentimes cannot tell who is going to hurt them, or when, or how; but they have a dim feeling and are expecting to be hurt. I think I have observed that condition of mind in many cases where the patient has been overheated before becoming insane.

DR. HURD: Mr. President—It is to be regretted that the term, traumatic insanity, is so general in its application to a large number of these cases. In the term "traumatic" we have included by different writers cases, first, of simple shock, where the patient becomes maniacal as the immediate result of the shock. I remember, distinctly, two cases of traumatic insanity of this character. In one of them, the patient became wildly maniacal immediately after receiving a blow from a falling tree, and for several weeks was excessively destructive of clothing, dangerous to all who came in contact with him and very difficult to care for. He was brought to the asylum and immediately recovered. He did not go through the different stages of recovery which we find in other maniacal patients, but from the time he came to the institution until he left he showed no active mental symptoms whatever; he was simply feeble in mind. He gradually gained in mental strength until he went away from the institution in a short time.

In another instance a laborer working in a planing mill received a blow upon the head from a stick of timber which he was managing. In some way the timber became engaged and acted as a lever, and the long arm of it struck him upon the head. He was unconscious for some time, and within a few hours developed maniacal fury which lasted for a number of weeks. He was brought to the asylum in a state of acute dementia, but within twenty-four hours was able to talk and give an account of his injury; and from that time went on to complete recovery.

Now these cases of shock—for I can call them nothing else—seem to be the form of traumatic insanity which is especially curable. Fortunately, in a majority of instances their excitement is so violent that they go to asylums almost at once, it being impossible for the relatives to get along with them, and the rest, quiet and favorable influence of asylum surroundings appear to be all that is necessary to insure their convalescence.

In a second class of cases the symptoms are not so violent from the start. Patients seem to be comfortable for a time after the reception of the injury; but within a few weeks symptoms of meningeal trouble develop, and being insidious in their onset the condition is not recognized until systematized delusions—generally of apprehension—develop. When such patients are brought to the asylum they have systematized delusions and in many instances do not get well. If they are persons who have been in the habit of using alcoholic drinks, or if their vitality has been very much impaired by any constitutional trouble like syphilis, or a tubercular diathesis, such patients become suspicious, irritable and demented, and remain permanently in the asylum.

A third class of patients, which is also in my experience very unfavorable to recovery, are those spoken of by Clouston, where maniacal symptoms or delusions of suspicion develop after sunstroke. In these cases—or at least in the great majority of them—I believe some change has taken place in the intimate constitution of the brain. In these cases there is essentially an incurable condition.

A fourth class of traumatic cases is unquestionably where you have a direct damage done to the brain by the depression of the skull—the skull-cap being broken—or where there has been *contre-coup* or some other form of violence. In these cases there is no question that surgical interference is useful, but in others it seems to be useless.

I regret therefore that under “traumatic insanity” we class such a variety of diseased conditions, which vary in their character and severity, and give rise to diseases which vary in their curability. I believe it is misleading to call them all cases of traumatic insanity as we are doing every day in our reports.

Now, a word as to the curability of insanity by traumatism. In my judgment an explanation of these cases is to be found in the shock which the patient sustains in consequence of the injury. We are all familiar with cases of maniacal excitement which have been cured by some violent shock to the system. In old times, when blood-letting was considered a legitimate method of treating maniacal fury, the patient's excitement subsided, almost invariably, after a certain amount of blood had been let. We meet even with cases, which, years ago, had been treated in this way and whose friends are extremely anxious that we should let blood, because as they say, they know a maniacal excitement which would otherwise last weeks or months will then be arrested within twenty-four hours. The explanation is simple: the sudden depletion acts upon the system like a shock, and the maniacal fury subsides because of the sudden and immediate withdrawal of the patient's strength.

I presume that all can recall cases where pregnant women, who have

suffered from violent maniacal excitement have suddenly become quiet in consequence of child-birth, or an abortion. I remember several cases of the latter sort, where an abortion, with considerable loss of blood immediately produced an amelioration of all the symptoms. In my mind, the effect of the blows, which Dr. Talcott has described, upon his two patients, was to produce a similar shock and an arrest of maniacal fury.

DR. CHANNING: I may perhaps be mistaken in what I understood Dr. Talcott to say; but I did not understand him to say that the two cases of traumatic insanity were cured by it.

DR. TALCOTT: No sir, I did not intend anything of the kind.

DR. CHANNING: That is not the inference I drew,—that the recovered cases, which were cured through the injury were caused by injury.

DR. HURD: No sir, I do not think so.

DR. CHANNING: That is the impression Dr. Hurd gave me.

DR. HURD: Not at all,—I did not intend to give that impression.

DR. CHANNING: It seems to me that the two latter cases that Dr. Talcott describes would not be classified under the cases of traumatic insanity; they were simply cases that were cured by traumatism. I agree with Dr. Hurd that the number of cases is very small, in general, of traumatic insanity; but the number which are indirectly dependent I have no doubt is much larger than we generally suppose. That is, where injury in childhood is an element in the cause, and where, in circumstances which are unfavorable, a patient may in adult life, or after infancy, develop insanity which would not exist without the original injury.

Of course the two latter cases were cured by shock, if we may use that expression as Dr. Hurd says. The question is: What takes place in the brain in those cases; and if there is anything different from what may happen in any case when the patient gets well after some moral excitement? We read of these cases, but we know nothing definite about them. A sudden cerebral interruption takes place and increased healthy mental action supervenes. Mental habits are awakened up for the time being which have been lying dormant,—that is, for a sufficiently long time for the brain to begin to act in a normal way, so that the old habit is brought back to a certain extent and long enough to make the first step in the recovery.

DR. TWITCHELL: I was very much interested in the paper of the Doctor, especially the part which referred to the fact that injuries may occur to the child, in delivery, which in after years may develop into insanity. One day there was brought to me a case, a child of about ten years, whose birth, as I learned from the father, was after severe labor and the use of instruments during labor; and the father was impressed with the fact of some injury to the child at that time. In his early life there were no particular manifestations, but as he got older,—about nine years of age,—he began to manifest symptoms of excitement on little occasions,—exhibiting passion,—and very trifling affairs would excite his passions. Still further along he began to show symptoms of delusions and insanity. When I saw the boy, at about ten years of age, he had a

fear, and more particularly of his father, that he would be killed; he was afraid of his father. His idea was that his father sought his life; and not only he, but others. He refused to eat unless his mother first partook of the food; he had been indulged in this, how far I do not know. He would not taste anything unless his mother first partook of the contents of the plate. He has been with me now some four years, and that has gradually disappeared. The head is a little deformed; whether it is from the pressure of the instrument, at the time, I do not know. But the boy gradually improved in his delusions, and the fear of being poisoned has now entirely left him; but he is still excited by trifles and will give way to anger. On the street, in a little trifling affair with another boy much smaller than he, he attacked him, knocked him over and began beating him. Beside that, nothing else developed. There was nothing hereditary about it. It occurred to me, as Dr. Talcott was reading his paper, that that might be a case as the result of injury at childbirth.

Another case which is very similar to one Dr. Talcott reports, but not the result of traumatism, was a patient that was not brought under my care directly, but I was called in consultation. He was in a low, muttering form of delirium, at the time I saw him, and the case had been diagnosed as typhoid fever, which I was satisfied was not correct; but he had had gonorrhea. The urine was loaded with pus the time I examined him. He continued through the spring, summer and winter with no material change in his mental condition. The question of sending him to the asylum was agitated, but as he was too feeble to leave the house it was not done. For about a year after the attack he had been largely confined to bed, though now and then the family would get him up and he would lie upon a couch. His sister was with him at one time and assisted him to rise up. He suddenly started and called out, "What is that?" frightening her a little. He said, "Somebody shot me! I am now all right," and from that time he was perfectly well. He knew nothing of what occurred during the previous year and yet was partially conscious throughout the whole time. From that time the man was entirely well and his mind perfectly clear. The year previous was an entire blank; not an incident could be recalled. It was very similar to the case Dr. Talcott reported, but not the result of traumatism as far as I could learn.

DR. DEWEY: A case occurs to me in this connection which may be worth mentioning, having some unusual features, although I regret my inability to give very much detail of the pathological condition, as the patient was not under my care when he died. It was a man committed to the institution of which I have charge some four or five years ago perhaps, a carpenter of middle age and a very robust man, who had a year before, or thereabouts, fallen from a scaffold and received a severe concussion of the brain, there being no evidence of any injury externally. Still, there seemed to have been a concussion. He was a man of drinking habits, and from that time was noticed to grow more irritable all the time, especially when drinking; and, in the course of a year and a half developed delusions in regard to his wife—her fidelity to him—and he became continually more beset with those ideas and with thoughts of revenge upon the men who, he believed, were unduly familiar with her, in the little town where they

lived ; and, finally, he started out with a shot-gun one morning, was apprehended and declared insane, and sent to my care. When he arrived the man appeared rational in every respect, and his conversation, in regard to himself and what he had experienced, was so correct that I felt some degree of doubt as to whether it was all delusion, as everything that he stated might have been fact—all his declarations, except that perhaps he believed his wife had exercised a greater amount of license than was conceivable. But I took pains to ascertain from reliable and unprejudiced persons the facts in regard to the standing and reputation of his wife in the community, and became satisfied that it was all delusion with him in regard to her, although that was the only thing evident in his case. The man was to all appearance, with that one exception, perfectly well from the start, and being a very good workman, I allowed him to go to our shop and work there. I continued him as a patient two or three months and then hired him, and he worked at the institution about three years, periodically becoming excited about his wife, who, in the meantime, had come with her family and lived in a town near the institution. Whenever he lived at home he would have trouble with his wife ; and whenever he was away from the institution, as he was a few times, he would begin drinking, sleeping badly at nights and becoming noisy and disorderly generally. But by staying at the hospital and lodging at the quarters with other workmen, where he was in some degree under supervision, he went along steadily until about a year ago or thereabouts. He left his work one morning and went home. When he reached the house he commenced talking in a violent way with his wife, went to the bed-room, shut the door, and in a short time the report of a pistol was heard. On going into the room it was found that he had attempted to shoot himself through the head, but the shot only resulted in a scalp wound. He was arrested and taken to the jail in the city ; but on the urgent request of his wife and other friends, that he be sent away from the institution, I applied to the Southern Hospital in our State, at Anna, and received permission for his admission there. I should say that he had in the meantime been again brought before the court and declared insane. He was sent to the Southern Asylum, and within a short time—two or three weeks I understood indirectly from his friends (I do not know all the facts, I wish Dr. Wardner were here to give them)—he was taken with a sudden stroke of apoplexy and died within a few hours.

NOTE.—Since making the above statement an inquiry, addressed to Dr. Wardner in regard to the case, has brought an answer as follows :

“It was our opinion that the scalp wound may have caused concussion, probably followed by inflammation and perhaps effusion, as there was paralysis and a comatose condition. We knew nothing about the traumatic origin of his insanity until the receipt of your letter, *i. e.*, his fall from a scaffold. We did not make a *post-mortem* examination in his case, which is to be very much regretted.”

In the above case, one traumatic incident produced insanity and a second apparently slight concussion resulted in death, coming, however, at an interval of five or six years, and with some alcoholic excesses intervening.

DR. GODDING: I feel in regard to the very interesting paper of Dr. Talcott that I cannot, perhaps, add much to the discussion; and yet the question of shock has been raised here as a method of accounting for this traumatic insanity, and the very interesting cases of aphasia, or aphemia, as the Doctor suggests. It is in regard to the sidetracking that the Doctor speaks of that I wish to raise the question, Where had that mind gone? or, What condition of the brain-cells existed during all those weeks of semi-bewildered memory, that this man, when he came to himself, could not recall anything of that time?

I happen to have in my experience half a day knocked out of my life; and it so well demonstrates this point that I wish to make, that I hope it will not be taken as bordering upon egotism if I relate it:

When a boy, some distance from my home, I was carrying wood and fell on the ice, striking upon my head; and, probably after lying with the load for a time, I revived sufficiently to pick up my wood and take it to the house where I was going, remaining to talk to the lad I was stopping with and, finally returning to my own home, about a quarter of a mile away. Unfortunately I was not in my right mind, and remaining so I seated myself at the supper table and ate my supper with the other members of the family. My mother, anxious to learn in regard to how I left my playmate, proceeded to ply me with questions. To these, being in that aphasiac, or aphemic, or traumatic condition, I invariably replied, "I don't know," until my mother spoke angrily, "What do you know?" which seemed to start a flood of tears, and I was at once myself. For weeks I could not recall the previous day. After studying the matter in my mind, I could remember the shutting of the door where I fell, but I could not then, or ever since, remember from that time until I found myself, some hours later, sitting at the table.

Do we, by the use of the word "shock," explain anything? Do we know more what a shock is in a case of brain trouble of that kind? In the last analysis it is simply a condition of the nervous system.

The latter part of the Doctor's paper interested me very much. These traumatic recoveries have certainly occurred in my experience, at least twice, after a severe blow that threatened to be a dangerous blow, from one patient upon his fellow-patient, and have resulted in a commencement of recovery—a shock which proved very beneficial. The suggestion has presented itself, if we could only discriminate in those cases where the use of a club would bring about recovery from insanity; perhaps, in that "decadence," as Maudsley terms it, hospitals would be authorized each to practice with the silver hammer, as the Doctor suggests. I merely throw this out as a suggestion.

DR. ANDREWS: Two ideas occurred to me, Mr. President, one upon the paper by Dr. Talcott, and one upon the discussion which has taken place. The question of traumatism is one that we have to meet in almost every medico-legal case that comes under our observation for examination. I do not think there is a man here who has had to examine one accused of crime, but has had to meet this question. If there has been an injury to the head at any time during the course of the man's life, no matter how simple, no matter how insignificant in its results at the time, it is

claimed to be the basis of insanity. It is because of this that traumatism assumes a degree of importance which it otherwise could not have. The second idea was in regard to the suggestion of Dr. Hill, as to the probability of insanity resulting from traumatism some years after the injury has been received. This does not admit of question. I should however be quite sceptical of an insanity resulting from traumatism without there was a clear history of the injury, and evidence of the brain having suffered either by unconsciousness or by symptoms of other mental disturbance.

There is a great similarity in many cases of insanity resulting from sunstroke to those resulting from traumatism. We have from sunstroke, such cases as Dr. Talcott spoke of in his paper as occurring from traumatism, where the insanity comes on after many years, as in the case of the telegraph operator, 18 years afterwards. It has been my fortune to meet with several cases of insanity in which sunstroke has taken place years before. In those, I believe, that the pathological state is substantially the same as in those resulting from traumatism, that is, we have meningeal inflammation with resulting thickening, affecting the circulation of the blood and thereby disturbing the nutrition of the brain. This is often a slow process and only occurs after many years.

In regard to the question as to the condition of the brain, in the case given by Dr. Talcott, the statement of Blandford is probably correct, that the sudden changes that take place in these cases are the results of changes in the molecular condition of the brain. We may call it shock and if we are to explain shock I cannot think of any better explanation than this, viz., a change produced in the molecular condition of the brain by injury, either of a physical or mental character.

DR. TALCOTT: I would like to suggest that, in regard to the treatment of these cases of traumatic insanity, we tried to have them assume a recumbent posture and remain so. Absolute rest seems to be required. These patients were nourished upon a warm liquid diet—milk and beef tea. By the prone position and suitable food, the circulation was made as easy as possible, and all the functions of the body and brain were rapidly restored to a normal condition.

I believe there are two classes of traumatism. In one class a slight but long-lasting inflammatory process is set up, and organic changes in the brain are developed. Members of this class are not likely to recover. There is another class where there may be, as Dr. Andrews suggests, molecular displacements or dislocations, and in such cases recovery may occur through the influence of rest and treatment.

In asylum practice you may find cases which have suffered from mania for years, with functional disturbances or simple molecular changes in the brain, and such cases might receive a blow or shock and thus recover. Those who have received brain shocks from the ordinary accidents of life may be relieved or cured of insanity by absolute and continued rest, with appropriate diet and medication. Especially should rest be employed, if there is a tendency to inflammatory metamorphosis in the brain.

DR. RICHARDSON: Just one word. I remember, some twelve or

thirteen years ago, a case at the Athens Asylum that answers the description of the last two described by Dr. Talcott quite well. I cannot recall very much of the personal history, except that an adult male came into the institution in a condition of raging mania, and after having been with us for a few months, in one of his noisy paroxysms was attacked by another patient, struck and knocked to the floor; he arose from the floor sane and continued so, and was discharged a few weeks afterwards, recovered. He has not been an inmate of the institution since. I know nothing of the history of the case since the discharge.

I am inclined, however, to think that there must have been something peculiar, either in the form of insanity or in the manner in which the blow was applied, because, if my memory serves me, we have had several similar blows since without any recovery. So that the difficulty relative to treatment would be the lack of a long series of trials, with classified experiments to determine where the blow should be applied, and in what stage of the disease. It seems to me, while the cases are interesting, they are only interesting as curiosities and not useful as indicating proper methods of treatment. Another thought that Dr. Godding referred to. It seems to me that the brain is not sidetracked in reality, as I inferred from the Doctor's paper. It seems to me conscious identity only is in abeyance, and possibly that is limited to a very small portion of brain area—the brain functions continue, intellectual activity proceeds as usual and the only trouble is that the individual does not recall it subsequently; there is an inability to recall the operations of the brain subsequently.

DR. EVERTS: It is always pleasant to listen to the recitation of interesting facts, especially where they are so concisely presented as Dr. Talcott has presented his. But as we all may know by the subsequent discussion, there are few of us who cannot recall very similar cases. There can be no question about the relation of traumatism to insanity; I think though, it is very much exaggerated. I have noticed since it became fashionable to clip young boys' and even men's heads like they clip horses, that there are very few heads that do not present a great many scars. My impression is that head injuries recovered from are no longer to be regarded as causes of insanity. In some cases shock, and in some cases concussion—two that I remember—leave permanent results. One instance of the kind that I remember was a boy of nine, and the other a boy of about twelve years of age: one thrown from a horse, and the other jumped from a second story window to illustrate his capacity as "the great American jumper." The boy thrown from the horse struck on his head on the ground. The boy from the window struck a flagstone below, breech first; the concussion of the brain resulting from force transmitted through the entire vertebral column. In both cases unconsciousness continued about nine days, and imbecility followed, as a consequence of arrested development. The great question—the conundrum—that Dr. Talcott presents: What is the condition manifested by these mental phenomena, as described? That is just what I do not know. That is just what we would like to know. There are a great many things connected with brain capabilities and functions that are occult still, as manifested in hypnotism, spiritism, and in these sidetracking conditions, as not inaptly expressed by

the gentleman. Those are the interesting questions of the day; those are the final questions in physiology; those are the questions that we have yet to solve before we know much about insanity, or sanity either, for that matter.

As to the practice suggested, I remember having an application by letter from a lady, who had a sister in my hospital, enclosing a paragraph from a paper, in which an account was given of a lunatic that had been struck on the head with a club, knocked down, bled freely and recovered; and she wanted me to practice the same on her sister, which I declined to do, however; and I have never been inclined to adopt the practice since. I should only recommend it now upon the homœopathic principle, with a decided attenuation of it, fearing it might be dangerous otherwise.

DR. CHAPIN: We should feel indebted to Dr. Talcott for calling our attention to the subject of insanity following injury to the brain, as well as to some of the results that follow injuries received by the insane. I was recently called upon to give an opinion upon the probable consequences of a severe injury unattended with a fracture of the skull, and was surprised at what seemed to me an extraordinary dearth of satisfactory literature upon the subject. All agree there may be a mental failure, and authors are usually content with this simple statement.

Two classes of cases present themselves at the hospitals—in the one, an injury, as a concussion or fracture, has been received, followed perhaps by a meningitis, after which the patient seems to be well. Gradually, however, a change, or alteration in the manner of the patient appears. He becomes petulant, irritable and passionate, subject to paroxysms of violence, and complains of pain from exposure to the sun. There may be epileptiform seizures, and at the end there is mental failure with dementia. The consequences seem to follow the injury remotely. Two cases of fracture of the skull with depression, in my experience were trephined and died. Both showed they had suffered from chronic meningitis.

In another class of cases the mental disturbances follow the injury immediately. I have reported a case of acute mania of six months' duration following concussion received from a fall from a horse. Another case was admitted to the Pennsylvania Hospital for the Insane—that of a man thrown from his wagon to the pavement. In this case there was no fracture but the brain was severely jarred. When admitted to the hospital, he was in a state of delirium which continued three days, when he became quiet, silent and passive. There was no meningeal disturbance apparently. There was partial loss of power of the lower extremities. The extremities were livid, the face was without expression. The temperature was lowered, there was paralysis of the vasomotor system, and a mental state analogous to what Dr. Clouston calls a loss of power of mentalization. Under electricity, tonics, and a generous diet he made a good recovery in three months.

It would thus appear that the range of mental phenomena that may attend traumatic insanity is very wide and the conditions quite opposite.

On the other hand I recall the case of a patient who had been

regarded as a passive, harmless dement, always silent and indifferent to his wants and appearances, who jumped through a dumb-waiter passage, from the third floor to the basement, without suffering any injury, but seemed rather benefited, as he became quite talkative and turned out to be a good farmer. Many present can doubtless offer similar experiences.

As to the probable future outcome of injuries to the head, whether followed or not by meningeal inflammation, I think we ought to be extremely guarded in expressing an opinion in view of the well-known remote changes that take place from a disturbance of the proper nutrition of the brain, from concussion or actual damage to the brain.

DR. STEEVES: It has been said that everything comes to him that waits; and so by searching and waiting physicians are able to form their theories, whatever they may be, at least to their own satisfaction. However this may be, I am well assured that traumatic insanity is of much more frequent occurrence than our records show. I believe the popular idea in respect to this question is correct. I have of late years made more diligent search for this evidence than formerly, and the result has been that I have found a history of injury to the head, in a very large number of cases, and I fear, in the past, I have overlooked in some cases this element. I have in a number of instances learned from patients themselves, after they had a residence of months and years in the asylum that they had an injury followed by unconsciousness, which had been overlooked by the friends, or perhaps not known to have happened.

On motion, the Association adjourned to 8 P. M.

The Association was called to order at 8.30 P. M. by the President.

The Secretary read letters of regret for the inability to attend this meeting from Drs. Grissom, Schultz and Wilkins.

The discussion of Dr. Steeves' paper was next in order.

DR. HILL: I am not prepared to discuss the question with any profit to others. I would simply remark that I think tuberculosis in the future will be a more infrequent cause of death in institutions for the insane than it has been in the past, chiefly on account of the greater proportion of patients engaged in outdoor occupations, and the greater length of time spent by them in outdoor life. I am inclined to think that tuberculosis in hospitals is partly due to the sedentary life of many patients who are almost totally demented; their inactivity in the wards, their failure to keep up a vigorous circulation of the blood, and to expand the lungs.

DR. NICHOLS: I did not have the pleasure of hearing the paper but get a pretty clear idea of its character from the remarks upon it that have

already been made. I take it to be an indisputable fact that the mortality in the institutions for the insane in the United Kingdom is larger than it is in ours, and I have attributed the difference, largely, to the low temperature to which they allow the air of their asylums to fall. In passing through a large district asylum in Ireland whose provisions and management justly enjoy a high reputation, I inquired of the polite medical officer who accompanied me and dutifully vaunted the merits of the institution, at what temperature they aimed to keep the air of the wards in winter, when with some circumstance and emphasis, as though he was announcing an express merit of the establishment to which he belonged, he informed me that in winter the temperature of the house was registered every day and not allowed to fall below fifty degrees (50°) of Fahrenheit! If a minimum of fifty degrees was really a special merit of that institution one imagines that the temperature of those who claim no special merit in this regard, may sometimes be allowed to run seriously low. A gentleman who has long managed a great asylum in the west of England with very marked ability and success, with whom I had a conversation upon this subject, candidly admitted that I might have grounds for the fear I expressed that the mortality from phthisis pulmonalis in the British asylums might be materially due to the low temperature of their houses in cold weather.

An American gentleman who was at one time connected with a very large English asylum, told me that in order to be comfortable he sometimes found it necessary to wear his overcoat and hat into the wards. Such a practice there would seem less odd than here, as the physicians of asylums appear to be more in the habit of wearing their hats in their wards than we are. The licensed hospitals and private asylums are probably better warmed than the pauper asylums.

I quite agree with the last speaker with reference to the importance of outdoor exercise to prevent the development of phthisis in patients, particularly in chronic cases; but where patients are out in the cold season great care should be taken that they are warmly clad, especially that their feet are kept warm and dry. When indoors and quiet, however, invalids whose vitality is below par, as is the case with a majority of our patients, whose capillary circulation and heat-generating power is feeble, should live in an atmosphere whose temperature is not lower than sixty-five degrees (65°) of Fahrenheit. American asylums as well as American dwellings may be kept too warm: many of them undoubtedly are; but I think it better to go to the extreme of a too high than to that of a too low temperature. A variety and abundance of well-cooked food are, it may be added, as important preventives of consumption as warm, well-ventilated apartments and outdoor exercise.

DR. STEARNS: I did not intend to make any remarks upon the paper of Dr. Steeves, but Dr. Nichols' remarks in regard to low temperature in asylums abroad call to mind my experience several years ago in visiting several asylums, not only in England but in Scotland, and I remember I was decidedly impressed with the idea that the temperature in these asylums generally was too low for the health of the patients. It was a common thing to find a dozen or twenty patients in a ward hovering around a

small fire endeavoring to get warm with such shawls as they could get over their shoulders on a cold day, and to hear coughing from a considerable number of those patients. It seemed to me that if there was any one condition above another aside from improper food that would tend to develop any latent tendency to tuberculosis it would be such temperature as these patients were accustomed to live in, especially in the winter season, and in so moist a climate. I am very certain that the general appearance of a large proportion of patients in these institutions would not compare favorably with the same class of persons in our institutions and the degree of temperature furnished in them. It is quite possible that some of our institutions have too high a temperature for the best health attainable, and it is best to avoid either extreme. It seems to me also that the element of food is an important one in the treatment of all classes of the chronic insane, and if they are kept on a plain diet with little variety and with a small quantity of meat, as many of these patients in England and Scotland are, that that, in itself, would tend largely to develop any tendency existing toward tuberculosis.

Dr. Steeves, in his paper, refers to the proportion of deaths from tuberculosis occurring in his institution as being one in five, as I understood him; possibly he said one in four, all forms of tuberculosis being considered. Now it does not strike me that this is a very large percentage of deaths from that form of disease. I believe that during the last thirty or forty years the percentage of deaths throughout the New England States has been one in five, from some form of tuberculosis; so that on that basis, there would be no greater number of deaths in the asylum, from that form of disease, than in the population at large in New England. What the percentage of deaths is from tuberculosis in the Provinces I am not prepared to say.

It occurs to me also to suggest further, the great importance of taking different views of the relation of tuberculosis to insanity. Some are interesting, especially the one relating to diathesis. We often see that a consumptive parent has a child which instead of developing consumption develops insanity, and *vice versa*, and an insane person may have children of a phthisical tendency. It is our duty as physicians to emphasize the importance of taking these factors into consideration, in advising as to the education and general training of these children. Instead of giving them sedentary employment, or overworking them by sending them to school six or seven hours every day, and thus exhausting the nervous system, we should see that they are judiciously educated and judiciously fed—that they are educated to some form of manual labor—a kind of education that seems to me to be the best for these classes of persons, as it tends to develop the system and ward off this latent tendency which is certain to develop under other forms of education and life.

If it would not be out of place, Mr. President, I would like to refer to the subject of Dr. Talcott's paper for a moment, by alluding to a case which was formerly in the Retreat. The case has occurred to my mind since the discussion has been going on, and would appear to resemble in one particular, those which he has described. The point relates to *shock*, or arousing the brain into a condition of normal activity after it has been

for a long time in an abnormal condition. The case is that of a young lady, who, before coming to the Retreat, had been insane nearly two years and under the care of a member of our society. She had suffered from melancholia with delusions of suspicion, and at times had been very suicidal. She came under my care, and was in this condition at the time of her admission, constantly suspicious that people were about to injure her, and had that delusion in regard to myself. Whenever I visited her she was confident it was for the purpose of doing her some form of injury, and all my conversation addressed to her in making my visit, she construed to have some hidden meaning. This condition of things continued for some time. Under the course of treatment pursued, and in process of time, she gradually improved and seemed to be very nearly well. These delusions and impressions gradually became fainter, but there still existed a tendency towards depression, and as she herself expressed it, her "brain did not work clear." There was a dark cloud hanging over the mind, at times more thoroughly developed than at others, but at no time did she feel thoroughly well. While gradually regaining her health, though still experiencing these feelings of depression, she says that one day she threw herself upon her bed praying with great fervency, and with the deepest emotion, that she might be relieved from this terrible cloud. She afterwards declared that all at once it passed away, and she felt that the circulation of blood in her brain was commencing again in its old channels, and the brain was again acting normally. Now it occurs to me that in some of these cases where patients recover suddenly, as this one did, passing into a normal condition, and afterwards remaining well, that there has been an imperfect circulation of the blood, and that the "sidetracking" is caused by this failure of the circulation in the vessels of the brain, perhaps due to over vaso-motor activity, so that there has been an impoverishment of limited areas of the brain and that the restoration of the circulation which occurs under strong impressions upon the nervous system, causes the mind to resume its normal activity. This appears to me a more reasonable explanation than that of special molecular change. It is exceedingly difficult to understand how there can be molecular displacement unless there is positive injury to the brain itself, in which case there must be more or less hemorrhage. It certainly would not be easy to understand how the effects of hemorrhage should suddenly pass away from the influence of excitement. In some of these cases, therefore, in which, what we call shock has aroused the brain into normal activity, I am of the opinion that the true cause has been an increase of nervous energy arising from the influence of subjective or objective causes, or the general effect of a development of better health in the system; these influences certainly may cause the brain to pass into a condition of healthy activity. I have another case which I think would confirm that view, but I will not take up the time of the Association in relating it.

DR. ANDREWS: I would like to make a few remarks on Dr. Steeves' paper, "Tuberculosis in its Relation to Insanity." The Doctor's statistics would seem to be quite conclusive in regard to the numbers of insane people who die from phthisis, but, as one gentleman has remarked, it only equals the number that die in ordinary life and therefore there does not

seem to be any excessive number dying in asylums. It occurs to me that the numbers that die from tuberculosis in asylums at the present time is less than formerly. At least this has been my experience. I can go further and say that we have had among the patients treated a less number of cases of phthisis, proportionately, than is reported in general society. But, however that may be, I would like to enter a protest against one of Dr. Steeves' conclusions—that asylums favor the production of tuberculosis.

The improvements in the heating and ventilation of asylums and the increased freedom in out-of-door air and exercise, place patients under the most favorable hygienic conditions to resist any tendency to this form of disease.

DR. GUNDRY: As I did not have the privilege of hearing the paper, I can talk a great deal better about it, and not be biased by any impression made by it. There seems to be no question that there always has been in Great Britain and the Provinces, and here, when the insane people are confined, a large quota of them dying from tuberculosis. Whether asylums cause that or not, I think is a very immaterial matter.

Now, let us examine the two or three statements made here to-night. Dr. Hill states that he will not have so much, because his patients are more out-of-doors than they ever have been, and therefore, that the confinement up to this time has been a very large factor in the production of death from tuberculosis. Dr. Nichols says that he has visited many of our institutions; that they always have been well-heated and the diet superior, compared with that of other countries. Dr. Nichols, on the other hand, states, and accurately, that a large amount of death from consumption prevails in asylums abroad, where the temperature is very low in the asylums and where the food, especially the butter and such things, is less than in this country. Now, you see, the open air on the one side is diminishing what cold and open air has already produced on another. We have, in other words, arguments balancing one another, without disputing the fact, because we have the same result under opposite conditions, showing that such conditions cannot be very important factors.

Let us go a little farther back and recall two or three things. I remember reading an article, a good many years ago—so many that I hardly care to speak of it—of Dr. McAlpie, now of Ontario, in which he makes this broad statement: that when he came into the Provinces, many years before, there was very little tuberculosis in the Upper Province of Ontario, or a very large part of it, and that he had noticed, having kept notes of the progress of the disease there, that in proportion as people got more comfortable in their relations—in so far as they built, what were called houses with better hygienic accompaniments; as they got modern conveniences and departed from the log-houses with crevices, etc., and began to have heating with regular temperature—consumption began to be very much more apparent in the population, and it is the same thing that we find in asylums.

Take one other little fact: Dr. Holmes states that he was riding one day with Dr. Waterhouse, who pointed out a house in which there was one case of phthisis that he knew of in a large district of New England. It was along the road from Cambridge, I think, to Salem. The disease

was so uncommon that his attention was called to that fact; which Dr. Holmes states seems to be incredible, inasmuch as in this generation the disease called phthisis is a common factor of death in that community.

Now it seems to me that matters are simply thus: that the increased temperature and high living do not prevent the ravages of this disease, and that the cold and low living do not seem to prevent it; that there does not seem to be any proportionate increase, whether you increase the height or the lowness of the temperature, but that it marches steadily along, and that it is, in other words, an evolution, or degeneration of the race generally; and that when we have an increased insanity, with a tendency to development of low forms of physical life, we also have a very large increase of the amount of phthisis.

Here is another instance where statistics are so exceedingly imperfect. In institutions where *post-mortems* are most readily made there is always found a much larger proportion dying from tuberculosis; but these external conditions seem to have very little to do with it. In many cases a return to active life is probably the best antagonist to ravages of tuberculosis; and confined life, whether in high temperature or low temperature, will be but one weight added to the rest to help in the development of that which produces such great mortality.

Dr. Fisher read a paper on "Paranoia as Relating to Hallucinations of Hearing."

Dr. Hurd read a paper on "Imbecility and Insanity."

On motion of Dr. Godding the discussion of the papers was postponed, and the Association adjourned to 10 A. M., Wednesday, May 16.

The Association was called to order at 10 o'clock, Wednesday morning, by the President.

The discussion of Dr. Fisher's paper was first in order.

DR. HILL: Mr. President—I have got up two or three times to say a word, because I think all these papers ought to be discussed somewhat. I am not qualified to discuss them very much, but will break the ice, perhaps, for others. I feel reluctant about using the term monomania or paranoia, because there is disagreement among us as to what cases of insanity should come under that head; and while I am trying to determine that question, by reading and otherwise, it seems to me that the lines of demarcation between monomania and other forms of delusional insanity are not well defined, and I for one am very anxious, if that form is to be retained in our classification, to have its boundaries well fixed and to have the characteristics of it well understood.

DR. HURD: I think it desirable, when we are engrafting new terms upon our medical terminology, to have a definite idea of what each new term means. The term paranoia has been used recently as a substitute for

monomania, and I think it has very many advantages over the term monomania.

When I first went to an asylum, a large class of cases was denominated monomania. They were usually cases of dementia after mania, and from this fact the term frequently used was dementia-monomania. The intention of the term dementia-monomania was to indicate cases of mental impairment with a tendency in some special direction. Under that term also were classed cases of chronic mania with a leading delusion. In many instances, too, cases of opium habit and inebriety were classed as cases of monomania or dementia-monomania; and the result was a confusion of ideas which has found expression in many reports. In Dr. Fisher's paper, yesterday, reference was made to the fact that, in some institutions, as high as twenty-five per cent. were put down as cases of monomania. I am positive that in institutions giving twenty-five per cent. of cases of monomania some such very wide meaning must have been given to monomania. For that reason I am glad to have that term given up, and a new term employed with a definite and distinct understanding of its meaning.

In paranoia, to begin with, we have a hereditarily impaired brain, or a brain which is extremely susceptible to disturbing influences. Krafft-Ebing says that such a brain is "hereditarily burdened," as he expresses it, or has an acquired susceptibility due to some accident, such as a blow upon the head or some other injury prior to the full development of the mental power.

Another element in paranoia must be considered; the development of systematized delusions, generally, but not invariably, of persecution. These delusions of persecution arise without antecedent excitement or depression. They do not interfere with the logical processes of thought. A patient possessing this impaired brain and entertaining these systematized delusions, is able to think logically and connectedly; is able to express himself well. There is, at first, no incoherence nor excitement and no true depression, perhaps, for many years. After a time, however, as the mental trouble increases, there is finally incoherence and utter loss of self-control. The termination of these cases is sometimes in complete dementia, and, in other cases, perhaps in the majority of instances, such patients instead of becoming demented develop delusions of extravagance, delusions of persecution and annoyance giving way to delusions of great extravagance, until the patient becomes what was, formerly, a simple case of monomania with extravagant delusions. I have regretted to observe in many reports and articles in medical journals, during the past few years a tendency to call chronic mania, paranoia. I think it very important that the original landmarks of this form of disease be very carefully observed and that we do not include those cases in paranoia, nor many of the cases formerly included in the term monomania.

DR. STEARNS: Last year, at the meeting of the Association, as some of the members present may remember, I read a paper on the Classification of Insanity, and in that paper I referred to paranoia. Dr. Hurd has very accurately and, I think, very correctly described the peculiar character of that form of insanity to which some writers have applied

the term paranoia, but which appears to me to be decidedly objectionable.

In the first place, the term vitiates any principle of medical nomenclature when applied to a genus of insanity. I think the principles which guide us in the selection of names of diseases require that we should have reference to the character of the disease to be named. This has always been an accepted principle in the nomenclature of disease in general, and the term monomania was evidently adopted with that idea in mind. But paranoia has no definite meaning as applied to any special genus of disease; it simply signifies insanity. If we desire to use it instead of insanity as descriptive of mental disease in general, it would be proper to do so. But we have already adopted the term insanity as descriptive of an order of disease, and now to take a term meaning exactly the same, neither more nor less, and apply it to a species of disease coming under the order of insanity, is about as unscientific a course as could easily be adopted, and is certainly at variance with the course pursued in any system of classification in other departments of science with which I am acquainted.

In the selection of a term to describe a form of disease it is certainly appropriate to select such a one as would in some measure convey an idea as to the nature of that disease. We are all agreed that monomania does not do this when applied to that form of disease now under consideration, and is therefore objectionable; but why set aside one objectionable term to adopt another equally objectionable, although for other reasons? In passing it may be proper to recall the fact that monomania has been used to describe what are now regarded as two different forms of mental disorder, and indeed, as more often, descriptive of delusional insanity of a sequential character; that is, sequential to systematized forms, such as mania and melancholia. It has also been applied to that form of insanity which is not sequential to other forms and for which we now seek a new name. This latter genus arises *de novo*; is not attended with maniacal excitement or depression, and is due to some congenital condition of the brain, or one acquired in early life; it consists, essentially and mainly, in some form of delusion which in the process of time tends to become systematized. This constitutes the primal element, especially during the initiatory period. Now, if we are going to christen this form of insanity why not adopt something that shall describe it, at least in some measure? I should be inclined to use the term of Primary Delusional Insanity. It seems to me that this would be according to the principles of medical nomenclature and would have the advantage of containing a partial description of the symptoms of the disease.

DR. EVERTS: I rise to say that I endorse the conclusions of Dr. Hurd fully and in every respect. As to the body of the paper itself, the statements are not matters of discussion.

Dr. Gerhard, from the Committee to Audit the Report of the Treasurer, submitted the following report, which was, on motion, adopted:

Your Committee to audit the accounts of the Treasurer beg leave to report that they have examined the receipts and disbursements for the past year, together with the vouchers as filed, and find them to be correct. The Committee find in the hands of the Treasurer the sum of \$87.70 available for future use, and would recommend that an assessment of five dollars be levied upon all institutions represented for the coming year.

Very respectfully,

J. Z. GERHARD,
H. A. GILMAN,
HENRY M. HURD,
Committee.

The President announced that the next paper would be read by Dr. J. B. Andrews: "A Medico-Legal Case."

DR. ANDREWS: I introduce this paper with some feeling of hesitation, because I think that one who has been interested in the examination of a case of this character is apt to think it of more importance than do others who have not been thus interested. The case that I am about to present is one that occasioned me a great deal of labor, and one in which I felt a great responsibility. The report will give you the conclusions at which I arrived and the reasons for them.

After the reading of Dr. Andrews' paper Dr. Gundry introduced to the Association Dr. Wm. Lee, Secretary of the Lunacy Commission of Maryland, who was invited to take a seat with the Association.

Dr. W. Channing read a paper on the "Codman Will Case."

Dr. W. W. Godding read a paper, entitled "A Judicial Advance—The Daley Case."

DR. CHAPIN: Discussion on the very interesting papers we have listened to this morning is now in order. The first paper, presented by Dr. Andrews, entitled "A Medico-Legal Case," is now before the Association for discussion.

DR. NICHOLS: Mr. President—The reading of Dr. Andrews' paper reminds me of a case of real, as well as feigned insanity, in which I was a witness many years ago, that has not been published and may be of sufficient interest to justify me in briefly relating it. In 1851, Judge Edmunds, then on the Supreme Bench of New York City, requested me to examine a prisoner in the Tombs, awaiting trial for homicide. I found the man to be a tall, thin Irishman, with a dull, slowly-acting and apparently honest mind. By patiently questioning him I drew from him that he had long suffered from constipation, indigestion and headache, and that he slept poorly. He admitted the homicide, but seemed disinclined to talk about it, and I left him under the impression that he would tell me more about it at the next interview, or after he had got better acquainted with

me and I had gained his confidence. At my second interview I was not a little surprised to have him reply to whatever question I put to him, "I don't know, sir," in a slow, measured way. Adding "sir" to every reply, you see he was more polite than Dr. Andrews' man. The suspicion naturally arose in my mind that the prisoner had been tampered with, and that some one, having his rather low order of intellect and his simplicity in view, had thought that stupidity, not any complicated form of insanity, was the best *role* he could play, and had instructed him to reply to all questions, "I don't know, sir." At the third visit I paid him he exhibited the same stupidity and returned the same answer to every inquiry I made of him—"I don't know, sir"—however simple the question and however obvious the proper answer, and I could extract no other words from him. The prisoner was then brought to trial, at which the following facts were elicited: He made a living by selling knives, combs, pocket-books and the like from a basket. His wife, who had not had children, was comely and bright, and received social attention from the men of her acquaintance, which greatly annoyed her husband. Perceiving his annoyance he had been teased a great deal by his thoughtless acquaintances, and finally, at a ball or other festivity at the tenement house in which they lived, the men present showed his wife many attentions of more or less doubtful propriety, for the purpose and with the effect of making him most miserable. Sleeping none that night, early the next morning with his basket of articles for sale on his arm, he went to the Fulton Market, where he purchased a pointed knife, and soon after, meeting the man whose conduct had most worried him the night before—and on other occasions if I remember rightly—he stabbed him fatally. Of course, he was arrested and indicted for murder, and when arraigned for trial, he did not appear to understand the object of his arraignment and had made no preparation for the ordeal before him, whereupon Judge Edmunds requested two young lawyers who happened to be in court at the moment to defend the prisoner, and he was remanded to jail to await their preparations to do so. The judge, at the same time, requested some half-a-dozen physicians in general practice and myself to visit the prisoner, and be prepared to testify as to his state of mind when the trial should take place. At the trial all of my professional colleagues were, at my request, examined before I was, and all testified that he was insane.

I then stated to the court that I had no precedent for such a case, not then having met with one in my reading or then limited experience; while I agreed with the other physicians that the prisoner was insane it seemed to me that he feigned insanity. Thereupon, without concluding the trial, the judge sent the prisoner to Blackwell's Island, which then received patients of both sexes, and appointed a commission, consisting of the then superintendent of that institution, Dr. M. H. Ranney, of Dr. Abraham V. Williams, a distinguished practitioner of New York, who was for a short time resident physician at Bloomingdale, and of myself, to examine into the man's mental condition, and when we had become satisfied as to what it was at the time of the homicide, or at the time of the examination, report it to the court. On the Island he for some time maintained the same apparent stupidity and made the same automatic

reply, "I don't know, sir," to every question. We then with difficulty forced him at different times to take whiskey and ether, with the hope of breaking his mental reserve and loosening his tongue, without the slightest advantage. The secret of the change that had taken place in his demeanor and of the motives of the homicide remained as securely locked in his breast as if he were an Egyptian Sphinx. The case was then allowed to drift along, with the mystery unsolved, with the result in the end that he confessed to Dr. Ranney, who had in the meantime completely gained his confidence, that when he was dressing early in the morning after the ball the Virgin appeared in the flame of his candle and told him that he must kill that man, and that he had purchased the knife and killed him in obedience to that authority, which did not appear to have been questioned, nor was it likely to be by a devout, simple-hearted Catholic into whose impaired and distressed mind such a vision and command would come and appear to be a reality. Though conscientious he never appeared to feel remorse on account of the homicide, and no doubt was ever entertained of the ingenuousness and truth of his confession. Both his general health and his mind grew more and more feeble and he died on the Island without having again been brought into court.

When there was no further expectation of his conviction his attorneys made *their* confession, which was, in substance, that when they visited their client in the Tombs they concluded that they could not defend him upon any other ground than that he had not intelligence enough to be responsible for the act, and therefore, after I first saw him, instructed him to feign ignorance and say, "I don't know." to every question asked him. The strictness and unswerving perseverance with which this poor man performed his simple but essential part in their scheme for his defence, was a touching display of the martyr-like fidelity with which an inferior will often rely upon a superior mind in straits of danger and difficulty.

You perceive that the confessions established the truth of the conclusions to which I had groped my way amidst much darkness and doubt.

As Dr. Andrews read his paper I was much interested in the critical fidelity as well as ability with which he had studied the case, and I do not doubt that the prisoner was a sane man, who out of his own volition and intelligence undertook to feign insanity to escape the consequence of his crime.

DR. EVERTS: Mr. President—I wish to congratulate Brother Godding over the fact of having lived a century or so longer than he expected to; and, in the language of Brother Wilkinson, I think it is becoming in this Association to "accept the dispensation of Divine Providence without complaint." I also wish to congratulate the Association on the reading of three papers describing three imbeciles with delusions, without once hearing the word "paranoia."

The only other points of great interest to myself brought out by these papers is a reminder of the fact that so-called "medical experts" are held by English judges,—and, also, in American courts to a certain extent,—without respect, if not in decided contempt. There is a reason for this. What that reason is becomes us to ascertain and to consider. Judges

of English courts, both British and American, are, as a rule, intelligent, learned, capable men—men occupied with most important trusts, interested in social structures and human affairs, in the progress of civilization and its results; and their observation of medical witnesses is acute, supplemented by the fact that medical testimony in criminal cases has never had much, if any, influence in this country in affecting the opinions of courts, or of juries, when not in harmony with public sentiment, as is known to us all. This is a significant fact to consider. It means something. Now, if we can ascertain what it means we shall have accomplished much. It seems to me that it means something like this: That the medical profession, or a certain portion of the medical profession, in the last half century, or less, has been presuming upon the proper functions of legislatures and courts; has been claiming that law as made and administered is unjust, unwise and unscientific, more especially in its relations to the criminal responsibility of the insane.

Now, it is a question with me whether what we call science—I mean those sciences which collectively we call “medical science,”—has anything to do with the question of responsibility of the insane, or the sane. That is a question of social science,—a question of politics and not of medicine. There are other questions suggested in this connection. What are the medical expert's qualifications, and what are his merits? What is the real value of what is called medical expert testimony? Do the sciences called medicine inform us with principles so well ascertained, so indisputable, so accurate and so applicable to the cases in point, that they can be depended upon as giving great value to the opinions of medical men in such cases? I do not know of any principle derived from the study of medicine, in any or all of its branches, that is a generalization from facts so harmonized as to establish it indisputably applicable, and adequate to the solution of mental problems,—such as are involved in cases of insanity before the courts. What do we know of the material condition of the brain by manifestations of mental peculiarities? Who can predict? Given as a problem the condition of a certain man, or brain,—who can predict what that man will, or did think; or how he will, or did, act? Or who, on presentation of certain manifestations of acts or of speech, can infer accurately the material condition of the man, or brain? There is no such principle. If a man is called upon as an expert accountant to give expert testimony with respect to book-keeping, he has principles,—accurate, scientific, applicable, indisputable. We all know that. We have known it so long that we do not question it. Every man knows that two and two, when added, make four, and that there is no possible way of so adding as to make five, or three. And so with the chemist and surveyor, and with all experts whose information is that of scientific principles. Now I contend that in medicine we have no such principles. We talk a great deal about medical “science;” we have a great deal of medical “information,” but no science! I mean science, in that sense, of accuracy.

Now, when a medical witness goes upon the stand and presumes to state, or to give an opinion that this man, or that woman, was insane at a given moment—or that another man's “will” was incapable of controlling his “wishes,”—that his “freedom of will” was destroyed,—that he was

“dominated by a fixed delusion,” and all that kind of thing,—he does not know that he is stating the truth, or more than guessing at probabilities. His opinions are based upon assumption that a medical man has no more right to make than has any other man of equal intelligence and opportunities for observation. An intelligent physician’s habits of observation and study of natural phenomena may enable him to become a better observer of the insane; but he knows no more, really, of insanity because of “science” than other men, and is not, unless otherwise better qualified, a better expert. And I do not wonder, when I think of the kind of medical men that are often called upon to testify in court respecting the mental condition of real, or hypothetical persons,—the medical expertness of the witnesses being based upon what they have read and assume to know—I do not wonder that capable judges have come to look with more or less contempt upon so-called “medical experts.”

DR. CHAPIN: These several papers are so nearly allied to each other, and to the subject of medical jurisprudence, that I think they may all be properly considered as before the Association; and remarks upon any one of them are now in order.

DR. GUNDRY: Mr. President—I intended to address the Association upon the three papers in unison, and should not have taken them in their order but for the remarks of the last gentleman who sat down. I have always wondered how it came that men of the highest position as judges—as Lord Campbell, infinitely the ablest lawyer who sat upon the bench for many years—should be persistently ruling against, and constantly objecting to, medical men, and that even the judges of Boston should have ignored them; but I shall cease to wonder after this assertion that medical men generally (or of my medical acquaintance) have no science upon which they can stand. I know very well how much that is said is wide of the mark, and how incompetent experts, or certain persons calling themselves experts, are often in courts; and I also know the absence of logical precision which we frequently meet with, even in the best of experts. I can make all that excuse, but I can never cease to think that the collective opinion of the profession is that upon which the law bases its progress. We sneer oftentimes at lawyers and at judges for their decisions; and, although they move very slowly, they do move in accordance with what gets to be the conviction of medical men, based upon what we call science, the acquired knowledge and collected experience of the profession.

When Sir Matthew Hale decided that witchcraft was a fact, it was upon the testimony of the most learned physician of his time, Sir Thomas Browne, of Norwich, who testified that that was the experience and the decision of the profession. When Lord Kenyon did just as Judge Montgomery did, decided that Mr. Hatfield should not be held responsible, because his delusion led him on in various ways, it was founded upon the collective medical testimony, as brought forward in Erskine’s speech, of the man’s condition. And so, bit by bit, progress has been made in this way; and while witnesses make very grave mistakes, it is true, yet I cannot for one moment hold that we have nothing whatever to base our claim

upon to be considered as being able to expound, much more thoroughly, the relation of mental causes and effects than others, except a few great men who have thought very deeply upon these things. No physician probably would be a better expert than Shakespeare was (or Lord Bacon, as the case may be), whose works illuminate the mind and lay open our humanity.

But physicians have a very much better opportunity for observation; if you choose to say that it is not science because it is not demonstrative science, I have no quarrel with the word. But the fact remains that the experience is had by us, resulting from the practice of our profession, and from that judges and juries must draw an interpretation of the facts. There are grievous mistakes made—and none more grievous I think than the one alluded to this morning—when the expert endeavors to give an opinion on a subject which is not before him. We must of course travel by the line of judicial action. If they decide that a hypothetical question is to be answered, and that you are to put your mind to the answering of that certain question, you are not responsible for that. But when you go to say that you base it upon the hypothetical case, and something else, and that is something else which is beyond the province of the jury, and when, therefore, you are interpolating something which they do not ask you to interpolate,—that is where the trouble begins. We have strictly to keep ourselves within the confines of the question. It is a failure to do this that draws down upon us, sometimes, the condemnation of judges. Then judges are human judges, and sometimes they are rude to us, as when Lord Mansfield forgot himself so far as to say: "There is a witness who calls himself a Doctor,"—or "says he is a Doctor,"—bringing the witness into contempt. Lawyers are petty tyrants for the moment, and they exercise their privilege thoroughly, sometimes, in the argument; though I do not think they are entitled to do it any more than a preacher or other professional man.

I feel that a star has arisen in the horizon. Dr. Godding tells us that one judge has decided that the question is not, after all, whether a man knows, but whether he can help it; that, I take it, is the basis of the language, if not the very words. There have been decisions before to that effect, and notably by Judge Martin, who decided in one case that they could not convict if certain elements existed; that if the poor fellow could help it he was guilty, but if he could not he must be acquitted. The only possible advance that I see is simply this: That the act was not the immediate result of the delusion. But I think it has been admitted that proving a delusion was by itself an evidence of impairment of the power of control; the fact that a man was not able to decide (with due regard to the character of the delusion) as to the effects of his delusion, and his having made a very erroneous judgment, was, *a priori*, reason to suppose that his judgment was impaired in regard to other matters. I cannot recall decisions now to that effect—if I remember rightly, there was one of Lord Brougham's cases, but I am not sure of that—but I am very glad because of this decision.

I wish to make one observation. The progress made by courts in that direction, devolves upon us a very great responsibility. When you once

admit (as I do very fully) that the test is, "Could the man help it?" not whether the man knew,—then you see it involves an investigation of the individual, much more fully—his environment, everything about him—much more than the mere test of knowledge. You cannot apply the yardstick mode of argument; that because one man under one set of circumstances was insane, this man should be insane in the same way. We have to take each one and project an idealized standard by which to compare him, and to give our reasons for considering that he was powerless before mental decisions; thus, it devolves a much greater responsibility, and in view of that we should be exceedingly careful in setting up another test.

This morning my friend, Dr. Channing—it may be that I speak rashly by virtue of misunderstanding of synonyms—but I understood him to argue that soundness of mind kept a man from great difficulties, which were incompatible with soundness; that a man who led a low course of debauchery must, therefore, be an insane man. Now the ablest of the Stuarts was the most open in debauchery, and Charles II. was another. They are quite on a parallel with Codman and Mrs. Kimball. Certainly no one argues Charles II. was insane. Then take the case of James II. I am recalling a very unsavory truth to show pretty much the same sort of thing. Dare we go into the private life of our great statesmen who debauched, and the greatest of all of them would hardly bear this test. Unfortunately it is too true that all great persons may have very great weaknesses, but it is not by that that we are to say whether a man is competent or not, intellectually. I think oftentimes, and I have had my attention a great deal drawn to the point, that we should think much more of what is health as well as what is unsoundness. They are not fixed quantities by any means: in fact, they occupy very different territories, and the territories have no straight lines between them, but a very crooked margin, and we often make excursions from one to the other, and sometimes get back to the right one before we observe it. Nevertheless, we say they are all influenced by the physical health. What is the health rate of pulse? Can anybody tell?

DR. EVERTS: Medical science can tell.

DR. GUNDRY: There are some things science cannot tell.

DR. EVERTS: Then it is not science.

DR. GUNDRY: Science tells that Bonaparte had a pulse of forty-four; Sumner had a very slow pulse, and others, but a degree of health that enabled them to do great things. Science tells what is sound as well as what is unsound. You will say disease of the heart makes a man unhealthy, yet, take the practical results and what do we have? Matthew Arnold died suddenly of disease of the heart which he had had for twenty-five years, but which had never interfered with his actions, or so far as to lead him away from his various public and private relations. We can hardly say he was an unhealthy man, although not having the health of some other beings, for he did, and fully, all the active duties of a citizen. Take the case of Sir Stafford Henry Northcote, for forty-five years having disease of the heart, but engaged in the support of a good government in that great country of his birth, and in his day one of her most active living

statesmen. Take the life of John Wesley, who required more sleep than other men of his years, yet, notwithstanding the infirmities of his health, lived so long and accomplished so much. He could hardly be called an unhealthy man who lived to the age of eighty-eight years. So you see the equation of health is a very variable one, you can hardly define it. You can hardly say that Napoleon or Talleyrand was insane, and yet, either or both, especially the latter, did a number of things which would lead to that belief. I might mention a great many other instances of the same sort.

Therefore, we have in every case to consider all these things. I might, quite readily, name a great many persons who did, what in other persons would have been sufficient to have made them thought insane men, but who could not, so far as they themselves were concerned, be put in that category. There is no such thing as a perfectly healthy man nowadays; each man carries some defect, either physical or mental. But to say that every man is unsound, or that every man is insane, is the veriest kind of absurdity. We have, therefore, to strike the average of soundness and the average of unsoundness.

DR. NICHOLS: As we have to do with our wards.

DR. GUNDRY: As we have to do with our wards—In the same way. Of course if a man treated Napoleon, he took into account the slowness of his pulse; was not frightened when he found it was only forty-four, and the temperature the same way. I need not enlarge on these points and detain the Association longer. I wish only to point out the way in which we call down censure upon us, or at any rate the direction our specialty should take; that we are to take into consideration how man is made up, first of all; the defects that are natural to him and the defects which come upon him by disease, from the facts ascertained; and the actions which are the product of that disease; and decide as well as we can from the very little light that is bestowed upon, or acquired by, all of us mortals.

We make great mistakes in our quotations oftentimes, and we constantly quote, "A sound mind in a sound body!" There never was a greater mistake.

"Orandum est ut sit meus sana in corpore sano." "We must pray that we have a sound mind in a sound body." There have been many sound minds in unsound bodies, and many unsound minds, to a certain extent, in sound bodies, so far as we can determine.

DR. FISHER: I would like to say one word on each paper. Dr. Channing has represented one side of the Codman will case very well. I was called by the executors and, necessarily, took a slightly different view of the case. I admitted that Mr. Codman was a habitual drunkard; I admitted all the moral peculiarities that the correspondence with Mrs. Kimball implied; I admitted also that, in the last few years of his life, he was prematurely old and demented. But at the same time there was evidence to show that he was not such an imbecile as the array of facts so well presented by Dr. Channing might imply. Any habitual drunkard or debauchee may have certain acts of his life spread out on paper in such a

manner and with such continuity as to cause one to believe that his was a case of insanity or imbecility, when each one of those acts is the result of actual intoxication at the time. Suppose a man is drunk every day of his life for twenty years, he may act as a drunkard and not as an insane man.

Moreover, the difficulty in breaking the will lay in the fact that Mr. Codman had not changed his mind in regard to it for over thirty years; and it was necessary to affirm that thirty years before he was just as imbecile as afterwards, and that he continued so to the day of his death. The will was reaffirmed from time to time, leaving the first and second mistresses money; and in court a letter was opened, written thirty years before, directing one of the executors of the will, or requesting this gentleman, to give to his first mistress, privately, ten thousand dollars; so that Mr. Codman was consistent in carrying out his original intention of providing liberally for his mistresses. There was, also, a certain excuse in his domestic relations for his departing somewhat from the ordinary standard of a proper domestic life. However, his course of life was not to be approved, and he was a drunkard, with all that the term implies. The will was very properly broken on the ground of undue influence. There was no doubt about the fact of undue influence, and that influence was exerted on a drunkard, but not necessarily on a very insane or demented man.

Concerning the paper of Dr. Andrews, I think I should agree with the Doctor fully in his decision in regard to the case. I think the man himself made a correct diagnosis of his own case when he said that he was a drunkard and a brute; and of course the shamming of dementia was only too apparent.

The case of Dr. Godding resembles very much the two cases which I presented. Daley was, no doubt, a paranoiac, or if Dr. Everts prefers, a primarily delusional lunatic.

DR. EVERTS: That means more than the other.

DR. FISHER: In reply to one statement of Dr. Everts, that experts are not scientific, and that scientific predictions are impossible, I would say that it is perfectly safe to predict that any paranoiac will commit homicide if he lives long enough, though he may require longer than the natural course of life. I will also state that of one of the patients whose cases I described, Dr. Corey, of Brooklyn, predicted, in 1875, that he would commit homicide if he was not restrained, and in 1887 he fulfilled that prediction literally.

DR. HURD: If it is not too late I would like to say a word about Dr. Andrews' paper, which I regard as one of great importance as illustrating the evil of including among typical forms of insanity and irresponsibility the disease of inebriety, so called. It is probably known to those who have read the *Journal of Inebriety* that one of the authorities upon the subject of inebriety, a man who, to use the term of the *Medical Record*, is "inebriated with inebriety," saw this person, examined him, and pronounced him a typical case of the insanity of inebriety. His reasons were as follows:

First, he found that the prisoner had a bad heredity. Dr. Andrews told us what that was: that he had a father who lost his life at the battle of Gettysburg, who occasionally drank to excess and was once violent towards his wife when thus intoxicated. His mother had suffered with rheumatism and was querulous as any other chronic invalid would be when nearing old age. This was the bad heredity. In the second place, we were informed by the same expert that this person grew up uneducated and untutored, in vicious company, and without any fixed occupation.

The facts are entirely different. The boy received as much education as, ordinarily, boys do in a city, who learn trades. He was confirmed in the Lutheran Church at the age of fifteen, showing that his training was a religious training. He learned a trade, and, although he did not work at it, he was none the less a skilled artisan, for the trade which he afterwards adopted, that of a confectioner, he carried on with so much skill that he was regarded as a very valuable workman; and up to the time he committed the murder, with the exception of occasionalsprees, he was able to work at this trade and to earn good wages.

Next is a statement as to alcoholic excesses which preceded the murder. The evidence is directly contrary to the statement made by the expert witness. The man was not drunk at the time he committed the murder; he had not been drinking that day; he had prepared himself in a very methodical way with a pistol to commit the murder, and the testimony went to show that after the commission of the murder he was able to tell where he had been and behave otherwise in a sane manner, thus disposing of the "trance" theory. And yet, notwithstanding all these facts and the added fact that his insanity afterwards was clearly feigned, the execution of this person is regarded as a crime against justice and humanity.

I think, for my own part, the time has come when we owe it to the public, as an Association, to put our seal of reprobation upon such forms of disease, manufactured out of the imagination, and foisted upon a trusting public, as the insanity of inebriety.

DR. CHANNING: I would like to say in answer to what Dr. Gundry said, that it would hardly be proper to set up a Charles II. as a standard of mental health and sanity at the present time. Codman, of Boston, which was the case I described, and Charles II., certainly were very different.

DR. GUNDRY: The Brougham was a case in point.

DR. CHANNING: I should not of course say that a man who was a voluptuary was necessarily an insane man, nor the man who was virtuous was necessarily a sane man. I do not think any such inference should be drawn from my paper. That was not at all in my mind. I simply described this man and gave the combined data in this one given instance. Dr. Fisher said, in regard to his action being sustained in reference to his will, that his will was made in this manner thirty years before his death. His relations with Mrs. Kimball had been begun only in 1871. He did leave, however, to a trustee under the will, at this particular period—perhaps thirty years before his death—a legacy to Mistress Number One. After that, being acquainted with Mrs. Kimball, Mistress Number Two, he kept both going together, between the time of 1875 and 1880, and entirely under the

direction of his lawyer, as shown by the evidence,—but I did not bring that in,—with one or two exceptions, the final will was made. It was all written in the office of his lawyer, between 1875 and 1880, the provision for his first mistress being retained in it; that idea being still carried out.

To what Dr. Gundry said, going outside of hypothetical questions, and that being the reason that courts have no more respect for experts, I am not sure that he is right in saying that. I think the great difficulty in the mind of the judge before whom I testified was, that this hypothetical question represented only a portion of the evidence; that, with nothing more, it did not represent the whole case; it was inadequate and insufficient, and the jury could not get a proper idea of what the question was. I think that is the reason he wished to exclude it. It was not on account of going outside of it in any way; and the jury in a short time bringing in such a verdict, certainly shows that the ordinary mind was influenced by the evidence.

DR. EVERTS: I wish to present myself on the record correctly. Judging from the remarks of Dr. Gundry, I must have said something that implied a rather low estimate of the medical profession. I did not wish to be so understood at all. What I wish to be understood as saying is that there are no such exact knowledges in the profession of medicine as there are in some others; or, as are necessary to furnish principles capable in themselves of giving value to expert testimony, in the jurisprudence of insanity. There is no man that is prouder of the medical profession than myself, or that has a more appreciative perception of the extent of the knowledge it embraces, its value to the people through the offices it performs, its value to civilization, its progressiveness and the great cultivation that there is in it, exceeding by far that of any other profession; broader, more liberal and generally wiser than any other.

DR. ANDREWS: I think I could perhaps illustrate the point of difference between Dr. Everts and Dr. Gundry by quoting two or three questions asked me on the trial of Otto. In reference to the question of the knowledge of medical experts I was asked whether I had ever seen a man's brain work. I was also asked whether I had ever seen a man think. This is the kind of science that we haven't got. When asked for my opinion of the mental condition I was able to give it. This is the kind of science the medical profession does have, and it is often of great value to the community. It is the kind of judgment too, that medical men above all others are capable of forming, judgment as to mental states.

The question as to expert testimony in New York State has reached a very peculiar stage. In the city of Buffalo the Probate Judge refuses to call expert testimony in will cases and falls back upon the decision of the court that the physician has no right to testify as to knowledge gained from his professional relation with his patient. In a will case before him he refused to allow an asylum physician to give evidence as to facts he obtained, as physician to the patient while in the institution. When asked how old the patient was, the question was excluded because he obtained that information from his position in the asylum. When, however, the physician stated that he obtained that information outside of the asylum,

it was received. He was allowed to give such testimony as would be offered by a layman.

DR. GUNDRY : In the Probate Court was that?

DR. ANDREWS : Yes, we have had a series of very interesting contests of wills there. You all know the will of Mrs. Ex-President Fillmore was contested. The contestants brought forward expert testimony, Drs. John P. Gray, L. C. Gray, Macdonald and Brush to show mental unsoundness, while the parties sustaining the will brought forward no expert testimony and yet the will was sustained. In the case of Francis Tracy, a case of inebriety in which insanity was claimed, expert testimony was refused by the Probate Judge. He said he didn't want it, that it didn't help him in any way to make up his mind, as the experts did not know the decedent. An appeal was made to the higher court on an exception taken to his refusal to have experts called. Again in a case just decided, the Marvin will case, the Probate Judge sustained the will and read the lawyers a most scorching lecture because of the attempt made to break it. In this case the testimony of a physician was refused.

DR. GUNDRY : Is your Probate Judge appointed?

DR. ANDREWS : He is elected by the people. He has seemed to recognize the fact that experts may be employed like lawyers on either side, and to think that such testimony does not assist him in reaching a just decision.

DR. GUNDRY : Has the Probate Judge's decision been sustained by the Court of Appeals?

DR. ANDREWS : I do not know, but he claims that he acts up a decision of the Court of Appeals.

Dr. Blumer narrated a recent personal experience as explaining, to some extent at least, the contempt in which medical expert testimony is sometimes held in New York State. A physician to the insane department of a county almshouse, having announced himself as an expert, and being questioned on the stand as to his acquaintance with the literature of insanity, admitted familiarity with the works of fictitious authors whose names were suggested to him by a shrewd district attorney.

DR. GODDING : As having been responsible for one of the papers, I wish to say a word. I think that Dr. Gundry, quoting from the English decisions, hardly covers what I regard "The Judicial Advance in the Daley Case," viz., that Judge Montgomery went below the decisions, which, the Doctor is aware had not been receded from since the Judge's answers to the House of Lords. The point that I make is that Judge Montgomery, going beyond the decision of Judge Somerville, of Alabama, in the case of Folsey, finally in his charge rests the responsibility of

the action, or the act, with the disease, even omitting the word *solely*. That is the point I wish to make, as being in advance of previous decisions.

I ought to say something in answer to my brother, Dr. Everts; but realizing that I have lived so much longer than I expected, and perhaps surviving my usefulness, I hope that Dr. Chapin, called in the Daley case, will answer in my behalf, being a younger man.

DR. EVERTS: I do not think I need any answer.

DR. CHAPIN: I desire to relate a case briefly which has some features quite analogous to the one Dr. Godding has properly presented as a "judicial advance." During the year 1886, Oscar Webber entered the shop of a dealer in clocks, in Philadelphia, and purchased an alarm clock. In the course of two weeks he returned the clock for repairs. After the repairs were completed he received the clock, but owing to some imperfection in the strike it was again returned. The parties were strangers to each other, and the reserved, morose manner of Webber attracted the attention of the clock-dealer and his wife, so that it was a subject of comment. On returning for his clock, Webber asked to see it in operation to be assured the striking apparatus was now in order. When this was shown, the clock was passed over the counter accompanied by an order from the proprietor directing Webber to leave the store. Both started toward the door which was opened to allow Webber to pass, the proprietor saying as he did so, "Now leave." Webber then drew from his pocket a pistol from which he discharged four shots, killing his victim. This seemed to be the history of the homicide.

Although I examined the prisoner and was of the opinion he was insane at the time of the homicide and had been insane for a period of one year, I was not asked to give testimony. The wife of the prisoner had endeavored to secure his admission to an asylum for safe custody. Abundant medical testimony was advanced to show the existence of insanity—certainly to establish a reasonable doubt of the sanity of the prisoner. But the trial judge in substance charged the jury that if the prisoner knew the difference between right and wrong, had no delusion connected with the homicide, and was not so enfeebled mentally as not to be able to appreciate the nature of the act, it was their duty to convict. The prisoner was convicted and now awaits execution.

Now this case bears some resemblance to that of Daley. Both acknowledged they knew the difference between right and wrong and the physicians were not able to discover the existence of any delusion connected with the homicidal act in either case. One said that he had a motive and intended to "get even" with his victim. The other (Webber) stated he shot the clock-dealer "because he fired him out of the store." Both gave reasons for their actions, and to that extent presented the elements usually considered as essential to establish criminal responsibility. At first view a difficulty may seem to present itself to determine to what extent insane persons shall be held accountable for crimes committed under the influence of sudden passion or emotional disturbances. Shall they be excused from every degree of responsibility for acts that do not materially differ from those of ordinary criminals? Such acts are but

psychical explosions, incidental perhaps to the underlying mental disorder.

In one case, as Dr. Godding has stated, the charge of the judge led to an acquittal on the ground of insanity, while in the other an opposite result was reached, and the State is now confronted with the responsibility of executing a criminal generally believed to be insane. In another sense both of these lives show the lamentable results that may occur from an evasive, loose municipal administration that too commonly prevails. In the case of Daley, he was under the observation of the officers of the District of Columbia, and his insanity plainly manifest, yet he was discharged from their custody and turned upon the community without restraint. The wife of Webber in vain pleaded with the authorities for protection against the dangerous tendencies of her husband. Probably in their view he had not as yet committed any violent act for which he should have been sent to an asylum. The loss of two valuable lives as the result of seeming neglect or ignorance ought to prove a valuable lesson.

DR. GUNDRY: Referring to the record setting forth what my friend, Dr. Everts, said here, I wish to apologize if I misunderstood him. So with Dr. Channing, if he did not say what I understood him to say, I apologize, of course. What I wished was to show that nothing, however absurd, or however criminal, was to be taken alone as evidence of insanity. A man may be the most abandoned person in the world without any evidence of insanity. I took it that was a part of the evidence to sustain the allegation that Codman was insane, and therefore capable of being unduly influenced. The other part I did not touch upon at all. I omitted one thing which I wish, with your indulgence, to add.

I went on to say if you take the ground that the true test of insanity is, "Could he help it?"—that we have to try every man on his own history entirely; and that is the reason why, estimating as I did and as carefully as I could, I came to a different conclusion from my friend Dr. Godding in the Guiteau case, in which I was consulted but did not testify, because I thought that while a great many things in other people would look like indications of insanity, his training, his environment, would naturally produce great differences. Though I am a full believer in what is erroneously called moral insanity—that is, that insanity may be shown by moral obliquities, yet I could not say that Guiteau was in such a condition that he could not help himself. I merely wanted to say that this view imposes upon us a very much graver responsibility than the mere determination, after he has committed the act, whether the man knows right from wrong. We could only infer from his general knowledge whether he knew what was right from what was wrong. I am glad that, at Washington, the gentleman named has made an advance.

Now this subject has been discussed by a gentleman named Stephens, who holds very much like this: That the right and wrong theory, as laid down by officers, or judges, which is an extra judicial proceeding and binds nobody, is simply a discourse which can be commented upon and explained away, just as a man explains away his creed; that is, a set of words which a man can set aside or not, as he thinks best. Stephens explains it in such a way and would charge the jury the same as Mont-

gomery, although not in the exact words. Lawyers, like divines, have a way of explaining their legal as well as theological views and making free with those views which they hold to-day, but which were announced years ago in the dictum of a judge to a jury.

DR. GODDING: I do not wish to cut short this debate, as one of my own papers is in it, but I wish to state that this afternoon we go to Hampton and to-morrow we go to visit the Hospital at Williamsburg. For our friends an extra car has most generously been provided through the efforts of Dr. Moncure and Dr. Barksdale.

I move that when we adjourn we adjourn until eight o'clock this evening, and then go on with the discussion of papers and such other matters as may come before us.

DR. GUNDRY: Before we adjourn, as there is nothing before the Association, I would like to move a resolution which will not, I think call forth any debate.

Resolved, That a permanent Judicial Council of this Association be and is hereby established, to be composed of Ex-Presidents of the Association, to whom shall be referred every nomination for Honorary Membership of the Association and all questions of organization and discipline, and such other matters as the Association may from time to time determine.

Resolved, That if at any meeting there should not be five of the members of said Council present, the President shall, on the second day of the meeting, appoint for that meeting as many members as may be required to make up that number to carry out the intent of the foregoing.

Subsequently amended by Dr. Gundry, by adding the Secretary to the members of the Council, and, in that form, unanimously adopted.

Dr. Kilbourne gave a special invitation to the Association from the trustees of the Hospitals in Illinois to meet in Chicago, in 1889, which was referred to the Committee on Time and Place of Next Meeting.

On motion the Association adjourned to 8 P. M.

The Association spent the afternoon in visiting the institutions at Hampton, and in inspecting them and the places around Hampton.

The Association was called to order at 8 P. M., by the President.

Dr. Brock, President of the Board of Trustees of the

Central Lunatic Asylum, was introduced and invited to take a seat with the Association.

Dr. Richardson read a paper on "General Dining Rooms for the Disturbed Insane."

DR. CHAPIN: The next paper will be read by Dr. Dewey, of Illinois, on "The Proper Size of State Institutions for the Insane."

DR. DEWEY: Mr. President and Gentlemen—I was prevented by an illness, which consumed about two weeks of my time in April, from preparing the papers I had intended, on The Size of Institutions for the Insane; and I wrote Dr. Godding, requesting him to remove the topic from the programme; but I suppose the programme was prepared and it was impossible to do so. Finding my name on the programme after I arrived here, I sent home for some little notes that I had made, and have in my mind only to endeavor to introduce this subject, as it is one in which I find that many are interested, in order that there may be discussion upon it. My remarks will be, I fear, very disjointed, as I have not been able to put the paper in any complete shape.

The immediate occasion of my paper was an extract from the work of Dr. Tucker, of Australia, which appeared in the *International Record of Charities and Corrections* for December, 1887. Dr. Tucker is, I suppose, remembered as an Australian gentleman who visited this country in 1882, and went, I believe, to every institution in the United States and Canada, and also extended his tour through Europe, and then wrote a very voluminous book. He propounded one question to every superintendent of an institution, which was this: "What is the greatest number of patients that can be properly treated for cure in one institution?" The answers given by different American superintendents were quoted from the book in this article that I speak of in the *International Record*. I will read the number given by the different physicians, commencing as low down as one hundred:

100—Drs. Carriel, Dewey and Spray; 150—Drs. Given and McFarland; 200—Drs. Bullock, Clark, Cowles, Dawson, Fisher, Gale, Godding, Jones (Louisiana), King (Geneva, Wis.), Matthewson, Parsons, Quinby and Tobey; 200 to 250—Dr. Smith; 250—Drs. Bland, Browne, Choate, Everts, Franklin, Howard, Kirkbride, Richardson (Ohio), Richardson (Penn.), Rutter, Sawyer, Shew, Vinal and Wise; 250 to 300—Drs. Bryce, Chase, Eastman, Grissom, Gundry, Parke and Wardner; 300—Drs. Draper, Hallock, Hayes (Ossawatimie), Hurd, Kilbourne, McDonald, Shurtliff, Stearns, Thombs, Wigginton and Wilkins; 350—Drs. Harlow and Palmer; 300 to 400—Dr. Andrews; 350 to 400—Dr. May; 450—Dr. Nims; 400 to 500—Dr. Armstrong; 500—Drs. Bowers, Jones (St. Peter) and Kempster; 400 to 600—Dr. Gerhard; 600—Drs. Denton, Gray and Strong; 600 to 900—Dr. Hall; 1000—Dr. M'Donald; 1250—Dr. Nichols.

Those were the answers given to that question. They presented a remarkable variation of opinion, and that is something that we might expect, naturally, but I think that the difference was very much increased, perhaps, by more or less difference in the views taken of the question itself by those who were asked this question. I think that some meant by their

reply, to indicate the whole number that could be accommodated in an institution ; others, when asked, " What is the greatest number that can be properly treated for cure in one institution ? " answered with the view that all the patients placed in the institution were to be exclusively recent or curable cases. I know that was my own impression, when asked the question, that one hundred recent curable cases were as many as one man ought to have to take a personal, individual care of. If I had been asked how many such cases could be treated along with others of a class requiring only the attention needed by confined insane, chronic and incurable cases, my answer would have been very different. I notice that Dr. Nichols, having an institution of less than three hundred, recommends twelve hundred and fifty ; while at the small end of the line are Dr. Carriell, who having about nine hundred, thinks one hundred a sufficient number, and Dr. Dewey having sixteen hundred patients holds to the same number. But the gentlemen are present and will perhaps explain their own views. The question still recurs as to what is the desirable number to be accommodated in a State institution for the insane, and it is one that presents a large number of conflicting elements. In the first place there is constantly, all the way through, on the one hand to be considered what the welfare of the insane abstractly requires, and, on the other hand, what is practically possible of attainment, as we know that we are constantly obliged to give up what we consider the most desirable from the fact that it is unattainable, and are placed between those two facts, the state of the public finances and the degree of the public indifference, the ignorance, the illiberality that are to be contended with on one side, while on the other we are seeking to attain that which, naturally, in our opinion is the most desirable, or to get as near as possible what is most desirable for the insane. Leaving out of consideration institutions maintained by private and individual benevolence, we have in all cases to depend for provision for the insane upon the law-making power. That is what we have to reckon with, and represents only the average public opinion of the community, or the view of the public regarding insanity. The general public opinion, it seems to me, is that the insane need to be kept pretty closely confined, so that they cannot do any harm, and that is about all there is to it ; the possibilities of benefit and cure and comfort of the individual are very little considered. Legislation, of recent years, has shown a tendency, continually, towards rapid and great enlargement, beyond what, I suppose, had been contemplated by those who were immediately concerned. I have a list here of seventy-two institutions, of which I find twenty-eight to have capacity under six hundred, while forty-four are above six hundred ; and the average capacity of the forty-four is seven hundred and eighty. A statement on the " growth of institutions " which I find in the *International Record* of April, 1887, shows that in 1880 the average capacity of seventy-nine hospitals was four hundred and seventeen, and the average capacity of those same institutions in 1886 was five hundred and eighty-seven, an increase in six years of one hundred and sixty or of twelve thousand six hundred and forty for the whole seventy-nine.

It seems to me that when we are endeavoring to determine what would be a desirable number to accommodate in one institution, one of the main

things to be considered (though not by any means all) is the best economy in construction and administration, the two being, however, quite distinct from each other.

In the matter of construction as related to size, the classes of patients to be accommodated form an important consideration, the question being as to the probable number of curable cases in any institution, of chronic varieties and also of the different classes of insanity that may or may not be admitted, the public and private, the recent and chronic, the criminal and epileptic, the violent and the inoffensive.

In some institutions, as in those of Ohio, I believe, epileptic patients are not admitted. In cases where they are admitted it is desirable, in my opinion, to have separate wards and buildings for them. And the criminal and convict class, though in some one or two States they are provided for separately, in most States are thrown into ordinary hospitals and mingled with the reputable insane. This is a class that ought to be kept separately and in different buildings, if possible.

Then, as to the individualization of the insane—the personal supervision of the superintendents, more especially—the number that any one man can personally care for and direct the treatment of, should be carefully considered. But, in my opinion, when the number gets beyond five or six hundred it is no longer a question of the individual attention of the superintendent to the patient, but his success will depend upon his ability to secure those through whom he can act with success—subordinates who are capable and efficient.

Then the variety of facilities of the institution appears to me to be a thing to be considered; facilities for curative treatment, particularly of the recent and the acute cases, and also for convenience in administration. Those are things that have an influence in favor of large numbers. Where an institution has many hundred patients, it is possible to provide with the same proportion of expense per patient many means of recovery or cure, care and convenience, that would not be attainable in a small institution.

Returning to the question of economy in the administration, I have some figures which were the only ones that I knew of, although I am not sure that they are absolutely correct.

In the report of the St. Louis Insane Asylum for 1887, there is a table giving the average number of patients and the cost per patient for maintenance for a year, of seventy-nine institutions. This is a table that has been presented from year to year in the report of that institution, and is said to be prepared by a very competent accountant from the reports of the institutions. After deducting seven private institutions, whose expenses are very much greater than those of the ordinary State institution, from these seventy-nine institutions, and separating the seventy-two in groups according to their capacity, I found that the cost of maintenance was apparently diminished as the institution increased in numbers. Taking the institutions under two hundred and fifty in number, of which there were seven, the average per capita cost was \$209.43 per annum. Then, in institutions under five hundred in capacity, of which there were twenty-one, the average cost per annum was \$205.53. Of those under seven hundred

and fifty in capacity, of which there were thirty, the average cost was \$192.80. Of those under one thousand in capacity, of which there were six, the cost was \$199.83. Under twelve hundred and fifty, of which there were three institutions, the cost was \$202.88; and under fifteen hundred, three institutions, \$153.74; and above fifteen hundred, of which there were two institutions, the cost was \$149.19 per annum. Grouping together all of those that were above one thousand capacity, the average cost per annum, per patient, was \$171.03; while all of those up to five hundred in capacity had an average cost of \$207.00, the difference being about thirty-six to thirty-seven dollars.

In the question of classification of patients, it seems to me that there are very great advantages in having a large institution, especially if there is in this a variety of buildings, and there are detached buildings; as it is possible in that way to separate patients and to have a building for very many different classes, which present themselves when there is a large mass of chronic insane to be cared for. Connected with the institution of which I have charge, there are about forty different wards. We have a main building, accommodating about four hundred of the recent or curable cases; also for the more violent and destructive and homicidal, and those that require close medical attention. Then there are eighteen detached buildings with a small hospital building for each sex, a building which we call a "relief" building, for the epileptic and criminal patients; one building which is calculated for the otherwise harmless "runaway" patients, and has window guards, one for each sex of that class. Then another building is arranged with special reference to the feeble and helpless patients, who need to have accommodations for meals in the same building and cannot go up and down stairs or out-of-doors very much. For these there is a large veranda, so they can sit outdoors; and the more or less used part not accessible by the general hospital. Then there are two buildings for the untidy class of patients, and two open wards for the paroled and trusty patients, giving a considerable variety; and, in fact, some particular nature, or class, or grade of insane persons, is provided for in almost every building.

The thought which I have been able to give to this subject, of the size of an institution, has not brought out in my mind any satisfactory result as to a fixed, definite number. I have about come to the conclusion that it is impossible to fix any number that would meet with the approbation of all who are engaged in the care of the insane, as there is such an infinite variety of conditions to be met with in every separate location; in regard to the number that must be provided for; in regard to the class of patients that have to receive care, and the number utterly unprovided for that are pressing for admission; and, still further, especially in view of the action of the Legislature, which is governed entirely by practical considerations. There is in the Legislature, a strong tendency to add to institutions that are once established, instead of building new ones. That is something beyond our control, to a great extent, and yet it has a vicious tendency. If it were possible to establish an opinion which would lead to

a different action on the part of the law-making powers, it would be a great advantage, because it is a short-sighted policy to assign additional patients to institutions which have had their plant put in with a view only to a certain smaller number. Then, as soon as the building is ready for the accommodation of additional patients, and the patients come in, it is found that the kitchen and boiler-house, the means of water-supply and heat, of lighting and drainage, etc., are all inadequate, and have all to be changed or modified; and the cost for the changes, in the end, mounts up probably as high as if a new institution had been started in the first place.

It seems probable that, as time goes on, State institutions generally will have their distinct hospital and asylum features, and that in future the main building will perhaps not be built on the linear plan—possibly will be only two stories high—(though the advantages of the linear plan undoubtedly are very great); and then in the further extension of the institution—I am speaking of an institution calculated in the first place for both chronic and acute cases—the buildings which will be put up will admit of an increase in capacity as the needs may arise, and the size of the institution will be determined by these; and the individual and especial care of the insane will be reached to a certain extent by high efficiency in organization, and by the buildings and surroundings of every sort being especially adapted to certain classes; although the one individual in charge of any institution may not be able to give personal attention to any more than a small number perhaps of the recent, curable cases, the latter being of course more important in their care and treatment than the other.

I trust that my disjointed remarks will be excused.

Dr. Charles G. Hill read a paper, entitled "A Plea for a Better Knowledge of Insanity by the General Practitioner."

The President announced the discussion of the papers read as next in order.

DR. GODDING: Mr. President—I wish to say one word; I will try to be brief. In regard to the work of Dr. Tucker, life is too short to wade through that voluminous work, but I apprehend it will be found that if the body of the report is examined, most of the physicians have made some intelligent statements in regard to their answer to his question as to what is the highest number that can be properly treated by one medical superintendent in one institution. I know in making answer to that question myself, I said that while I had charge, and had had for years, of more than a thousand patients, I never had at any time more than about one hundred curable acute cases. On examining that book, curiously we find that answered by some others. But Dr. Dewey has given the summing up in the manner Dr. Tucker has it. I think it is due to ourselves that this statement should be made on account of the apparent absurdity of our answers.

The subject I rise to speak upon, however, is the question of the associate dining-room. This, of course, comes diametrically in opposition to one of our early resolutions. I have not as yet undertaken to disturb the arrangement of some classes of patients in private dining-rooms. My remarks, therefore, would not come precisely under the head of Dr. Richardson's paper, but as Dr. Black had promised a paper on the subject of general dining-rooms, and could not be here to read it, I may speak of our experience in that direction. We provide for about four hundred patients in a large associate dining-room, a room that easily seats eight hundred patients. We purposely built a large building for the experiment. If it is a success, it will continue to be our practice; if otherwise, it is so built we can use it as an amusement hall. We provided for only about three hundred and seventy in the room. Thus far I think it has proved a decided success. I do, however, exempt all that class of patients which are apt to become very excited, noisy and troublesome, my epileptic ward of patients still dining by themselves. Experience would suggest doing that, after two or three epileptics falling at the table. Also, I would say for those too feeble, especially of the sick and hospital ward, we do the same thing. And, likewise, out of the large population of maybe a thousand male patients, we always have a number of blind men, and several one-legged and other crippled people; and they still have a dining-room by themselves. "The proof of the pudding is in the eating." We have not had experience enough to say how much, but there has been a considerable saving in the amount of food. The possibility of bringing everything to the table in bulk will eventually result in greater saving, having an attendant at each table to serve them, as Dr. Richardson does.

DR. CARRIEL: As I am pretty nearly at the head of Dr. Tucker's list, I rise to explain myself in regard to the number of patients that can be accommodated in one institution. Upon reading the statement in the *International Record*, I distinctly recalled my conversation with Dr. Tucker. It was among the first questions that he asked me, what I considered the proper number to be cared for and treated in one institution; and I remember my answer was: It might depend on how much assistance I had. He said he desired me to answer how many I could take care of individually, and I replied by stating that one hundred would be as many as I would care about, particularly if they were recent cases. I little thought at the time, although I did see his pencil scratching it down, that it would travel so far and then come back to us across the water; but it seems it has.

In regard to Dr. Dewey's paper as to the proper number to be cared for under one management, it seems to me that depends very largely upon circumstances. It depends perhaps upon the individual superintendent somewhat, to begin with; it depends upon the location and the facilities for extension. The amount of land and water supply might influence it somewhat. At Jacksonville we have only one hundred and sixty acres in one body, although we have three hundred and fifty acres altogether; and it would be difficult, and perhaps impolitic to cover the whole one hundred and sixty acres over with buildings. I

will say, however, that since we enlarged and put up an additional building to accommodate three hundred patients, I do not know as I think the superintendent's duties are largely increased, or his labors more onerous, and I think the whole number of patients are looked after and cared for as well as before we enlarged.

In regard to the question of dining-rooms, I will say that we dine at our new building—at the “annex” as we call it—three hundred patients in two rooms; one hundred and fifty in each room. We find no objection to it with the class of patients that we select for this building. We have, perhaps, some of the advantages Dr. Richardson mentioned. Possibly the food is served more promptly from the kitchen, and in a little better form. We have had no accident, and have observed no objection to dining that class of patients in rooms that will accommodate one hundred and fifty each.

I can conceive too, that a large number of what we call violent patients—I do not know as I will say violent patients, but the excitable class of patients, such as we have in our more disturbed wards—I think I can conceive how a large number of this class might be taken to a general dining-room; but I should hesitate, with Dr. Godding, to take some epileptics that we have to a general dining room.

DR. GILMAN: As has been suggested by two or three gentlemen, it seems impossible to determine the exact number that can be accommodated in every locality. Five years ago, in Iowa, there were only a thousand patients provided for in our hospitals, and there were three-thousand outside, in the county almshouses and jails, and provided for as best they could be at home with friends. When these matters were presented to our Legislature, the first question almost that they inquired in regard to was: “How cheaply can you provide for these patients?” I presume that there is hardly a gentleman present who, if the question were put to him, and he called to decide the number that could best be provided for in a single institution, would say more, perhaps, than three hundred; a comfortable number for one superintendent and two assistants. But our legislators do not ask us that question; we have to meet the question of whether the insane of our State shall be provided for under State care, with proper medical supervision, or whether they shall be relegated to the almshouses and jails, with no medical supervision and with no proper care. With these facts staring us in the face, my colleague and myself, in Iowa, have done what we could to provide for our insane under State care; and in doing this at Mt. Pleasant, where there was an institution originally constructed for four hundred patients, we have doubled the capacity by additional wings, at a *per capita* cost of five hundred dollars, which includes furnishing, heating and lighting, and the wings all ready for the accommodation of four hundred more patients, with all these provisions. We have also succeeded in agitating the question and bringing it before our people, so that another institution is in process of construction, and will be ready for the accommodation of two hundred and fifty patients within the next six months. Dr. Hill is present, and he can state in reference to the northern part of the State.

DR. TOBEY: Mr. President and Gentlemen—I suppose with the rest of the brethren I may as well contribute my experience with Dr. Tucker. My recollection of my conversation with Dr. Tucker is something like Dr. Carriel's. I remember he asked me what, in my opinion, was the largest number of curable cases that I could give personal care and attention to, and give them such attention as they would probably require. My answer was two hundred.

In regard to general dining-rooms my experience perhaps has been of too short duration to be worth reciting, but I will do so briefly.

The Toledo Asylum was opened on the 6th of January last, and we had in the institution, when I left a week ago, 750 patients, 387 males and 363 females. We have two dining-rooms located centrally, one for each sex; each room is 50 by 120 feet, inside measurement. Of the 387 males, 265 go to the general dining-room, and of the 363 females, 226 go to the general dining-room.

We have two buildings for disturbed patients, one for each sex. Each building has in it four wards and each ward accommodates eighteen patients. Some three weeks ago we began taking all the male patients from their building to the general dining-room, except one ward, the inmates of which are nearly all epileptics. We take a number of epileptic persons to the dining-rooms, but they are those whose seizures do not occur frequently. All of our patients go out from their wards and cottages into the open air, and in some instances go a distance of about three hundred yards to get to the general dining-rooms.

So far I have been exceedingly well pleased with the effect of the general dining-rooms on our household, for I believe they have done much to bring about order, quietude and good behavior generally.

In writing to Dr. Gundry a few days before coming East, I had occasion to examine the Supervisors' and Nightwatches' reports for the month of April. I found that with an average of over seven hundred patients we had but fourteen hours of seclusion for the entire month, and but six persons secluded.

On the male side of the institution, a number of nights during the month the nightwatch reported "All quiet," for the entire night. On the female side of the house there were always three or four that were noisy. There was not an average of more than four or five night draughts given.

I am of the opinion that the general dining-rooms of our institution have had much to do in bringing about this state of affairs, and that the open air exercise they get in going to and from the dining-rooms, and the relief from the monotony of asylum life they get by being taken out from their wards and cottages three times a day and congregated in a large and pleasant dining-hall, is conducive to good health and good behavior.

We received one hundred and sixty men on the 6th of January, and on the 12th of January, one hundred and eighty women, the most of whom took their first meal in the general dining-rooms, but, notwithstanding the large number that was received in so short a time, and the

confusion we had in our dining-rooms in the beginning, we have never had an accident nor any unpleasant disturbances.

Our asylum district consists of twenty-six counties and we receive all the patients from this district, therefore we probably have an average proportion of recent and curable cases.

DR. HINCKLEY: If the question of the comfort of our patients is to be considered at all, I do not think we can speak in favor of general dining-rooms in institutions of three or four stories in height, where the general dining-room is situated on the lower or upper floor. My institution has a dining-room on the third floor, which necessitates some of the aged and infirm people climbing three flights of stairs to their meals daily. In the largest dining-room we dine two hundred and ten patients of both sexes. I find that by the time the food is entirely served throughout the room the food on the first table is generally cold, and the patients who sit at this table generally have a cold meal. I am not in favor of the general dining-room system, after having tried it for three years; and I have concluded that in every ward where I can substitute a separate dining-room, taking into consideration the comfort of the patients alone, I shall introduce them. I have no patients in the institution, except perhaps one or two, who do not eat with the knife and fork. My disturbed patients eat together in a dining-room which is entirely off the ward, though convenient of approach; and they behave as well as those in the general dining-room. But, as I said before, if we take the comfort of our patients into consideration, 'in an institution three or four stories high, and where the dining-room is placed on the upper or lower floor of one of the buildings, I think it is inconvenient and uncomfortable, to say the least.

DR. GUNDRY: I rise simply to help out a friend. In speaking of the general dining-room system, Dr. Tobey, in his explanation, omitted to state what perhaps is unknown to a large number—that his buildings are separate and his people have to go out from the separate buildings, not only from the buildings for disturbed patients, but from the so-called cottages and detached buildings, to the general dining-room. This gives more force to what he said as to the remarkable benefit he had experienced in the management of his patients. Now he has told me—and I want to state this emphatically, for he has no acute disease arising from this practice although Toledo is well known to be in an exceedingly cold climate—that they turn out three times a day, that they have gum shoes and proper protection, that the rousing up three times a day has benefited them very much and that they greatly prefer going to this place where they dine to the use of the separate dining-rooms. I have advocated this plan for a great number of years and am glad to hear it is carried out.

Now, the gentleman who has just sat down says it is a hardship to infirm women and aged men. But can you not manage to put the dining-room on the floor where these people are? Furthermore, I cannot see any difference between climbing up and then down, or climbing

down and then up. Surely it can be so arranged, or the people so distributed that the minimum inconvenience will be suffered by the most infirm. All these objections urged are matters of detail, and can be surmounted by studying them. I am glad to see that we are going to carry out that change, strange as it may appear. Down with our people, my friend Godding thinks it impossible to do anything for us, but we are actually going to do it. I think, myself, that some modification may be attempted of the general plan. If it is found that there are difficulties in regard to the comfort of patients, having overcome so many difficulties, I think we can surmount the minor ones; the one, for instance, about the first table being cold by the time the last one is served. Why could they not eat while the food is warm? Although I admire the order that comes by eating at the tap of the bell, I doubt the necessity of keeping the food on the table. I do not see why the general dining-rooms should not be served the same as in a hotel. Why should we not try it as a dining-room in a restaurant? Why should that dining-room be kept shut up except at the one hour for each meal? Why should it not be used at other times for lunch, and to reward deserving patients? The great idea is that it draws travel from the main wards.

There is one practical point in it that should not be overlooked. Let me suggest it. Suppose you have eight or ten wards, four or five on a side; you have eight or ten possible places of disturbance. Then you are not sure that all your subordinates are, at all times, where they should be when you are away, and you will probably have better order in the one general dining-room than in the eight or ten separate dining-rooms. I think, also, that the coming together induces constant cultivation of social and other good habits.

In regard to Dr. Tucker—a moment. Certainly the older members know my extreme orthodoxy. If there is anything for which I am celebrated, it is my veneration for the old “Propositions,” and yet I find that one of the leading supporters of these “Propositions”—I say it with bated breath—has recommended twelve hundred patients to one institution. Why, it is astonishing! What can we think of it! Those “Propositions” have been our law, not to be scoffed at or appealed from, and some of the older as well as younger members have been reprimanded for even hinting otherwise; yet those who are of the sainted thirteen, even, are recommending the extraordinary numbers that I find in the list of Dr. Tucker. Now you see if they had stuck to the principles laid down they would not have got into this scrape.

On motion of Dr. Godding the further discussion on the papers of Dr. Dewey and Dr. Richardson was postponed until the consideration of the “Propositions.”

D. CHAPIN: Before changing the subject I wish to ask a question of Dr. Tobey. I think we understood him to say that of the seven hundred and fifty patients in his hospital, all except about two hundred and sixty took meals in the general dining-rooms.

DR. TOBEY: That is right.

DR. CHAPIN: What proportion of the seven hundred and fifty are recent cases.

DR. TOBEY: I cannot tell you just the proportion of recent cases. We have twenty-six counties in our district and have taken every person who has applied, and from county almshouses and jails. We have rejected none except those who were unmistakably idiots from birth.

I failed to state that we have two infirm wards and two hospital wards. Those of course have dining-rooms in their own buildings.

Dr. Curwen asked if any of the members had introduced modeling in clay and such subjects in the employments and instruction of patients in their institutions.

The President announced the discussion of Dr. Hill's paper next in order.

DR. LEE, Secretary of the Lunacy Commission of Maryland: When invited to a seat in your convention this morning, and having at the same time had the privilege extended to me of taking part in your discussions, I thought it would better become me to remain silent and be instructed, but after hearing Dr. Godding's report of the Daley case and Dr. Hill's able paper on the importance of "The Better Knowledge of Insanity by the General Practitioner," I feel as if, in justice to myself and your honorable body, I should give utterance to my concurrence in the points brought out by them and bring before you such facts as are known to me on this subject.

It will be remembered that the details of the Daley case showed him to be a man whose time was spent wandering from asylum to asylum, giving at each place a remarkable history, and whose mind was always laboring under one kind of hallucination or another, at the same time using all sorts of devices to avoid work. At each institution he was treated as a harmless crank, having little attention paid him; and that further, even after assaulting a gentleman in one of the parks of Washington, he was left at large, until he reached the climax of his "cranks" in the murder of Mr. Kennedy. Had those in authority been such as to appreciate more fully his true condition, Daley would long before have been adjudged insane, placed in confinement, and thus the tragedy spared us.

Dr. Godding, in a very modest and delicate manner, has shown that neglect existed; fearing however to ill judge some one, cares not to trace the case further; but as I am required from the duties of my office not only to gather information upon such points, but also to make them known, I would wish to ventilate the subject further—not as to who was in fault in this or similar cases, but to get at the root of the evil and provide for the avoidance of it in future.

The neglect most often rests with a lack of proper attendants in our minor state asylums or almshouses. I think therefore this body should take this part of Dr. Godding's paper into fuller discussion and suggest to

the public, who look to you for a remedy, how best to overcome the difficulty. Some plan should be perfected, by which the public could be induced to appreciate that proper attendants be appointed, irrespective of politics, and further, when a good man is found, to retain him. During my official visits to the various counties of Maryland, I have not only seen this great need at our almshouses, but have had related to me two cases, which, like that of the Daley case, prove how with a little more care, homicides and suicides could be averted. The first case was of a young German farmer, who became morose and irritable with at times violent outbursts of passion, and assumed a condition utterly foreign to his former habits. This state of things continued for some little time resulting in quarrels with his brother until the latter drove him from home. Having no place to go to, and no means at his immediate disposal, he wandered to the county almshouse. There he remained three days, being in an excited condition throughout his stay. The physician was sent for, and after a hurried examination, and upon the evidence of the superintendent that he was a crank, sent him from the institution. The said crank wended his way to his home, and inside of a week committed suicide. In this interval he had been more violent than formerly, and his brother had to lock him up. After doing so he sent for the family physician, who arrived too late to avert the sad calamity.

The second case was of a young Irishman, who was associated in business with his two brothers in one of the lower counties of my State. (From my observation the percentage of insane among the Irish is less than among the Germans). Near them lived some young women to whom in time they became attentive and over whom they had frequent quarrels. This state of things went on for a time until one of the brothers, in a most excited condition, started for Philadelphia, where he remained four days, returning home under the influence of liquor, although never before a drinking man. On the morning after his arrival he went to work, but was restless—would stop his work, look vacant for an hour or so, refused his food and at night walked the floor. This condition had lasted a week when he went one day to the village near by, called to see some friends, and upon invitation, remained all night. During the night he grew restless, and gave trouble by trying to jump from the window. A doctor was sent for, who proved to be the attending physician of the county almshouse. His verdict was that the young man was on a drunken frolic—gave some medicine and went home. Next day the poor fellow returned to his farm with no evidence of drinking, but his bearing was so peculiar that his brothers sent for another doctor, who pronounced the case malaria. The following day a quarrel arose between him and one of his brothers, which resulted in the patient killing his brother. This was the climax, and in a few days he was a raving maniac, and has ever since been. I am informed, in an asylum. Now, gentlemen, I ask, do not those two cases illustrate sufficiently the importance of the questions brought out by Dr. Godding?

In regard to Dr. Hill's paper, which we have just heard read, all must concur with him in the great need of more attention being paid to mental diseases by the schools of medicine. How shall we reach the recent graduate, who, armed with a diploma, thinks he knows everything,

or if he does not, finds no field open to him wherein the study of mental diseases could be perfected. Maryland has recently adopted a plan which other States might successfully imitate, viz., pass a law giving a certain number of young physicians the privilege of being resident students in the large State institution for the insane. Thus thrown with physicians who make this branch a specialty, and with an abundant clinic, the student becomes competent to be placed over similar institutions with less likelihood of making a faulty diagnosis.

On motion the Association adjourned, to meet at the Eastern Lunatic Asylum, Williamsburg, at 10.30 A. M., May 17th.

On Thursday, the members of the Association took the cars at 7.50 A. M., for Williamsburg, and on the arrival of the train at that place were taken directly to the Asylum.

The Association was called to order at 11 A. M. by the President, who announced, as the special order of business for the day, discussion on the "Propositions."

DR. GODDING: Mr. President—Under ordinary circumstances I should have something to say in this discussion of the report on the "Propositions." Much that will now be wisely spoken by others I might have rashly said, and then, when the discussion was over, have felt that I had better have kept silent and listened to what those had to offer who are possessed of more veneration and discretion than myself. It is well known that I am naturally conservative and that I prefer, if I must err, to err on the safe side.

In coming to the consideration of the "Propositions" I have felt in regard to what the fathers had framed with such pious care that I should not go wrong if I had consulted the fathers themselves; if only one could go and learn of them, he could speak with authority; it would be almost like having his lips touched with a live coal from off the altar.

Availing myself of my position on the Committee of Arrangements, I wrote to some whom time has spared us, and their answers, which I hope to read, speaking out of the years that are gone, will be eloquent and impressive far beyond any language of mine. I am glad to note that we have with us two who were present in 1851 and 1853 when these "Propositions" were adopted, Dr. Nichols and Dr. Curwen, and when they speak it is always a pleasure to listen; but some of these letters will speak for those of a still earlier time, the two survivors of the "original thirteen," the venerable Dr. John S. Butler and the hardly less venerable Dr. Pliny Earle.

I begin with one from Dr. J. P. Bancroft, of New Hampshire, at whose feet I sat, twenty-nine years ago, for my first lessons in the care of the insane.

"CONCORD, April 16, 1888.

"*Dear Dr. Godding:* I regret that I can now see no reason to expect that I shall be able to attend the meeting at Old Point Comfort on the 15th of May. You may be assured of my great interest in the subjects which will there engage the attention of the Association, and not least the question of the 'Propositions.' It is high time these should have another review. My own private experience has driven me from adherence to some of them. Prominent among these is the plan for the construction of buildings for the care and treatment of the insane—the stereotyped form which has prevailed throughout the country. This old plan massing large numbers has the merit of convenience in administration, but at the serious expense of variety in remedial influences. The last I regard as of the first importance, and yet in our stereotyped and monotonous architecture it is out of the question. For more than twenty years I have been trying to 'individualize treatment,' but at most points have been headed off by brick and mortar walls. How can we do justice to large numbers of insane persons, varying in natural traits, culture and habits of life and social instinct as much as the same number of well persons, in wards of twenty or thirty, with rooms and dining-rooms exactly alike? I believe it is impossible to organize such a ward for patients, as they come in from the general community, without sacrificing the best influences in a considerable proportion of individuals. Judge as delicately of individual characters and needs as you please, and I hold that it is utterly impossible to locate four hundred persons in buildings constructed as most have been thus far, without closely associating damaging incompatibles on every hand. Emerson said, 'Michael Angelo builded better than he knew,' but I think we ought to know better, than in most places, we have built. I think the time has fully come when experts in insanity should recognize that the average insane are a good deal like other people; like and dislike much the same things, and are influenced for good or ill by much the same external stimuli. hotels included. I shall not cease to press this point practically in this institution, whenever any new building is to be done during my life. But not to tax your patience I will express the hope that this subject will receive a share of attention at Old Point Comfort. Please express my regret at being obliged to be absent, and believe me

"Very truly yours,

"J. P. BANCROFT."

This is what Dr. Bancroft says. For more than thirty years he has been earnestly striving for the welfare of the insane, laboring, how earnestly those of us who have come in contact with him at his work know,—in a well appointed hospital, built on the stereotyped plan, to which his own latest addition, a distinct villa for his convalescents, is a magnificent success: in its construction contradicting the "Propositions" in every essential particular.

Through a long life, coming towards the evening now, he says he has been trying to "individualize treatment," and what has thwarted his purpose? Why, that "at most points he has been headed off by brick and mortar walls." This was his life, these "Propositions" were new, had

just been adopted by the Association of Superintendents when he entered it, and he tells us that stereotyped buildings have been stifling his efforts for all these years. There is a pathos in the letter and in the thought, reminding us of those victims of canonical hate walled up alive in brick and mortar in mediæval time.

Dr. Buttolph was present at both the meetings of 1851 and 1853 when the "Propositions" were adopted. From him we have but a line where more would be welcome.

"SHORT HILLS, N. J., March 10, 1888.

"*Dear Doctor Godding:* Your favor of the 8th inst. referring to the approaching meeting of Superintendents at Old Point Comfort is received, and I hasten to reply, that, as circumstances will probably prevent me from attending the meeting, I will not now mention a subject for discussion by me on that occasion.

"With thanks for your attention, very truly yours,

"H. A. BUTTOLPH."

Here is not a word about the "Propositions." It is perhaps fair to conclude that the good Doctor thought they needed no defense, possibly he felt as do many of the rest of us, that they belong to the glorious history of the past. At all events he is silent concerning them.

Not so the Nestor of Superintendents, one of the "original thirteen," Dr. John S. Butler, of Connecticut, who, far on in years, writes, with no sign of age, ardent for their revision:

"112 WOODLAND STREET, HARTFORD, March 28th, 1888.

"*My Dear Doctor:* In your programme of work no need of saving room for me. It will not be possible for me to attend the meeting of the Association, and I have neither the intention to present *case* or *paper*, or ability to do so.

"I am in very comfortable general health, and am enjoying much of life; the more quiet I keep, in obedience to my doctor's directions, the better and the happier I am. So I try to be content in being compelled to deny myself the (Old Point) Comfort which you offer me. I sent you some time ago my little book on the 'Individualized Treatment of Insanity.' If that question comes up in your discussions, and my 'plea' is directly or indirectly alluded to, let me ask you to see to it, that is, reasonably presented. I ask the adoption of that *principle of treatment*.

"I am rejoicing, in the enforced (comparative) idleness of old age, over the grand progress our rarely good work is making all over our own land especially, as well as abroad. The spirit of earnest inquiry is moving the minds of many and an advance is surely coming.

"What a change from the discussions—the doubts and anxieties of 1844-5 to the discussions and advances of to-day—and the promises of the future.

"I am very thankful that I have been spared to see and rejoice over it.

∴ Present to my brethren of the Association (the few old and the very

many younger) my hearty congratulations on the past and present, my confident good wishes and cordial cheering for that best work for the insane which is yet to be done for them.

"I remain, very sincerely, your attached friend,

"W. W. GODDING, M. D."

"JOHN S. BUTLER.

"112 WOODLAND STREET, HARTFORD, April 16th, 1888.

"*My Dear Doctor:* I believe, with good Dr. John Brown, in hobbies, their oftentimes eminent usefulness—but he forgets the caution, that egotism is so ready to slip up behind when the hobby is fairly mounted! Well, such is human nature—excuse me.

"I am not able to attend the meeting of the Association, but I am deeply interested in it, the more so since you tell me of the probable discussion of the old time 'Propositions.'

"To make sure that my views of the 'The Individualized Treatment of Insanity' will be fully and fairly presented, I send you to-day another copy of my little book, marking such passages as in my view are of large importance.

"Everts' motion was eminently wise and timely. The committee seems well selected. I rejoice over the greatly needed advance. The world *does* move, nowhere more than in the United States. To me the West seems coming to the front—Michigan is doing a grand work. I fear you will hear more of questioning and of doubt from the East—I hope not.

"Please keep me as well posted as you can on the proceedings. My interest is in no degree abated, in all that is or can be done, for this sadly afflicted class. The natural disabilities of old age compel an unwilling quiet, but my heart is as quick and warm as ever in sympathy with the insane.

"There is much I would like to say, but not now.

"I rejoice to *know* that individuality of treatment of the insane is coming to be largely accepted.

"Within my brief days, since my graduation in 1828, what advances in the treatment of typhus, consumption and cholera!—why not in that other physical disease, insanity?

"Work on, dear doctor, and may blessings rest in abundance on the great work you are so well and so *heartily* doing. God bless and keep you, prays

"Your sincere friend,

"DR. GODDING.

"J. S. BUTLER.

"P. S.—I wrote you a while ago; excuse possible repetition of accepted truths."

Why this sounds like the blast of a bugle far in advance calling us on to higher achievements and nobler aims. The "individualized treatment" of the insane: this is what Dr. Bancroft said he had been striving for in spite of the "Propositions," "lo, these many years," and Dr. Butler asks its adoption as a "principle of treatment." When an earnest man like Dr. Butler speaks, out of the wisdom of his "brief days since his graduation in 1828," in the support of a "principle of treatment," it becomes us, who

are of yesterday, to listen to the arguments that he brings. I make no apology that I quote the good Doctor somewhat at length.

I take his little book, "The Curability of Insanity and the Individualized Treatment of the Insane," the ripe fruitage of a vigorous age, and I begin almost where he left off, with a most pertinent quotation from Dr. Arnold, of Rugby: "Nothing is so wrong as the strain to keep things fixed when the whole organization of law and order is one of eternal progress." Was the Doctor thinking of this proposition when he quoted Arnold, "Each ward should have in it a parlor, corridor, single lodging rooms for patients, an associated dormitory communicating with a chamber for two attendants, a clothes-room, a water-closet, a dining-room a dumb-waiter and a speaking tube leading to the kitchen or other central part of the building"? How was it that, even with the speaking tube and humanity calling through it, the reaffirmation of 1871, and again in 1874, could not have added to the stereotyped requirements of these wards, at least a bay window and an open fireplace?

But I think it was another resolution, passed at the reaffirmation of 1871, that Dr. Butler had in mind when he quoted Arnold, viz., "That neither humanity, economy nor expediency can make it desirable that the care of the recent and chronic insane should be in separate institutions." Speaking to this, Dr. Butler says, "In the earlier days of my Retreat life, when our crowded wards crippled my means of classification, a quiet and apparently inoffensive case of dementia was necessarily located in one of the better wards; the poor man would sit silent all day in a dreamy stupid state, his only token of active life, the constant twirling of his thumbs. A refined and intelligent gentleman on the same hall, who was recovering from the results of an overworked brain, came to me one day, exclaiming with no little agitation, 'Doctor, I *must* go home.' I remonstrated, urging his rarely good prospects of a speedy recovery. 'Why should you go?' I asked. 'Because' said he, 'this continued rainy weather has kept me indoors for a fortnight, I am in your way in your business rooms, I have worn out the hospitality of Mrs. Butler, up there, seeing that poor old fellow twirling his thumbs hour after hour, day after day. I can't stand it, d——n it, I shall be just like him,' " And the Doctor adds, "My continued experience ever afterwards strengthened my convictions of the expediency and, indeed, humanity of the segregation of the chronic insane from the recent and hopefully curable cases."

And again, looking to these modern three-decker hospitals, Dr. Butler says, and again the plea is for individualized treatment *versus* congregate lunacy; "the same appliances that tend to make life in a well-ordered house, beautiful and happy, may be brought to bear upon the disordered mind, and its wanderings and vagaries be arrested by putting it as nearly as possible in relations like those of private, secluded homelife. The great caravansaries we call hotels are not home, neither do the immense structures we build as hospitals, however well kept, tend to promote the home content, and to awaken those sweet and restorative feelings that belong to the home itself."

"How clean and nice this room is," said a director to me one day, in one of the old, rigidly plain halls, long before the reconstruction. "Yes,"

I answered, "the floor, the bed, the walls are white, if not as white as snow, white enough to chill the heart of the delicate, refined young mother who is to occupy it to-day." "Why, what better would you have?" he asked. "All possible home-like ornamentation, neutral tints, pictures, flowers, etc., etc.; everything to give the room an inviting aspect, and not painfully to remind her of that refined and *home-like* room in which she has left her infant child."

How true to life this is! We can all parallel it from our own experience. The authoress of "Behind the Bars" is right when she objects to the attempt to cast all insane minds in one mould. The most enlightened curative care of the insane asks something more than polished floors, spotless white spreads and parlors so orderly in their arrangements that one hesitates to sit down in them lest he displace some tidy in doing so. In the chilling uniformity of hospital rooms, too often the soul-sick one misses the Chamber of Peace.

Again says the Doctor: "I have found few things more depressing and harmful to the recent and hopefully curable cases of insanity than even the sight, much more the association with the demented and hopeless. Classified however carefully as the multitude may be, the different individuals must come frequently in contact in the chapel and in the means of their recreation and amusement. With such immediate surroundings the recent case can hardly look from his windows or step out of his door without seeing or hearing some hopeless victim of a disease from which he has fainting hopes of his own recovery. Reason as you may with him, for the present time at least, the 'twirling thumbs' will beat down your sanitary arguments."

These are the conclusions to which Dr. Butler comes after sixty years of medical practice and more than half a century direct observation of the insane. It is safe to pronounce them *mature* decisions.

But we have one other survivor of the "original thirteen" who, while taking a somewhat different view of the "curability of insanity" from Dr. Butler, occupies no uncertain position respecting the "Propositions," the early poet, the ripe philosopher, the eminent psychist, Dr. Pliny Earle.

"NORTHAMPTON, MASS., May 11, 1888.

"*My Dear Dr. Godding:* The state of my health is not such as to justify an attempt to write to you as I would wish at this moment of the near approach of the meeting of the Association in the forty-fourth year of its existence. I cannot well refrain, however, from the expression of a few words bidding you, and through you the Association, God speed, in the endeavor to promote the benevolent cause in which you are engaged. May your labor be productive of a still further and ever progressive amelioration of the condition of the insane, thus accomplishing results which shall continue to justify the formation of the society, and redound to the honors of both science and humanity.

"By the published programme of the proposed proceedings at the meeting at Old Point Comfort, I perceive that a report upon the 'Propositions' adopted by the Association more than thirty years ago, is expected from Dr. Orpheus Everts. I have not been informed of the object in calling for such a report, and am consequently forced to the inference that it

is the intention of the Association to once more take into consideration the utility of those 'Propositions' as what may be called a codified expression of opinion, and thus determine the propriety of their future retention.

"The well known ability and character of the gentleman selected as reporter are sufficient guaranty that the subject will be thoroughly and wisely handled; but as one who voted for the original adoption of the first series of those 'Propositions,' and who would have voted in favor of the second series had he been present at the meeting when they were adopted, it may not be improper for me to give my present views in regard to them.

"In nearly all human undertakings, promotive measures vary in the different periods of the enterprise, so that, not infrequently, the course pursued in the earlier stages may afterwards become not only ineffective for good, but absolutely detrimental. The thirty-seven years of the existence of the first series of the 'Propositions' constituted an era of almost marvelous activity in our specialty, and a consequently unanticipated growth and expansion of it in every direction. Experience has been gained, circumstances have been altered, new views have been promulgated, opinions have been reversed or modified, and hence the 'Propositions' have, to a very considerable extent, been disregarded.

"Among those whose opinions have undergone a change I must place myself. Nor is this change, in some respects, of a recent origin. No less than nine years ago, in a paper read before the Conference of Charities held in Chicago in 1879, and afterwards published under the title 'A Glance at Insanity and the Management of the Insane in the American States,' I wrote as follows in regard to the construction of a hospital for the insane:

"In the construction of a curative institution of this kind, two general principles should constantly be kept in view. Not for a moment should they be forgotten or overlooked. These are, first, perfection of hygienic constructions, and, secondly, convenience and a judicious economy of daily practical working. These principles adhered to, why should the hospital, any more necessarily than the dwelling-house, be constructed upon an invariable model? Climates are not alike, customs and habits differ, and fortunately, there is no uniformity of tastes. Wherefore should not the hospital, as well as nearly everything else, be permitted to conform to this great diversity of circumstances and conditions?"

"But in my opinion, one of the greatest, perhaps the greatest objection to the 'Propositions,' as an embodiment of the views of the Association, is the influence, whether just or unjust, which they have exercised upon public opinion. I most fully believe that they have constituted the principle factor among those agencies which, in some sections of the country have greatly impaired the prestige which the Association once enjoyed, by engendering a belief that it is practically averse to progress in improvement; that it is running in the 'cast iron ruts' of precedent, that it is indissolubly bound to the faith of the fathers, despite the enlightenment of more recent observation, experience and thought. It is to be feared that the direct benefit of the 'Propositions' to the cause which they were intended to promote, has been more than counter-balanced by the indirect detriment thus produced.

"Of what use is an established nobility?" asked Lord Brougham, fifty years ago, of his friend Mons. Arago, the celebrated philosopher and Director of the Astronomical Observatory in Paris. 'It serves,' replied M. Arago, 'as a fixed point from which to measure the progress of government and of society.' Is there not danger that, by a survival of the needs which called them into existence, and of their period of actual and acknowledged usefulness, the 'Propositions' will come to be regarded as a fixed point from which to measure the progress of the great cause of beneficence to the insane? Has that period not already arrived? I believe it has, and that the future usefulness of the Association would be enhanced by a repeal of them.

"Yours very truly,

"PLINY EARLE."

And this is Dr. Earle, the other survivor of the "original thirteen," who after nearly fifty years of devotion to the work of caring for the insane, and thirty-seven years of practical experience in carrying on that work under the limitations of the "Propositions," now calls for their repeal. The fault is not in the facts that were then enunciated, but in the fact of their enunciation and the reaffirmations that have made them canonical. For no matter how true as the "Propositions" of to-day, still "Tempora mutantur et nos mutamur in illis."

Dr. R. J. Pattertson, of Illinois, who was present when the "Propositions" were adopted, hoped to be with us to speak for himself. I have only this line from him:

"BATAVIA, ILL., May 19, 1888.

"W. W. Godding, M. D.

"Dear Doctor: I have had it in mind to read a few pages within thirty minutes' limit upon 'Hospital Miscellanies,' touching especially upon small hospitals *versus* large ones. I have, however, been sick for the last two weeks, and am still quite ill. I doubt therefore if I shall be able to read anything at the meeting of Superintendents.

"Very truly,

"R. J. PATTERSON."

Though he says nothing about the "Propositions," he shows that he is still sound on the early proposition for the hospital of two hundred before it was extended to include six hundred inmates.

One more of the fathers, not of the original thirteen, but attending the second meeting of the Association, and yet in the harness, Dr. Andrew McFarland, of Illinois, still writes with the vigorous rhetoric of "auld lang syne."

"JACKSONVILLE, ILL., May 9, 1888.

"My dear Dr. Godding: 'The spirit is willing, but the flesh is weak.'

"In the progress of a fire last autumn, which consumed my female department, I received a severe injury from the fall of a heavy piece of furniture from a balcony under which I was passing. Fortunately it was only a severe scalp wound, though the stunning effect of the blow remained for several weeks. I must give this, and my present care in

rebuilding, as reasons why I must deny myself the pleasure of being at the forthcoming meeting of our Association.

"I must confess also to a further reason that holds me back—one which possibly influences other aged members whose fraternal affection only becomes the stronger with the lapse of years. Those vacant chairs! How can I look at them and not be moved to tears? In my memory, they yet have their beloved occupants, but alas it can be in memory only. Woodward, Brigham, Bell, Ray, Kirkbride, Galt, Stribling, Awl, Rockwell, Reed, Sawyer, Goldsmith—what a list, and yet not half complete. Our work is immortal, yet we who have it to do, are but passing shadows.

"Whatever may be the world's estimate of our work, to me it is all as nothing when I look back on those noble companionships which I have enjoyed for the long period of forty-two years.

"As my intermediate with one and all of the assembled fraternity, I must beg of you to 'kiss him for his brother.'

"With high personal regard, very truly yours,

"ANDREW MCFARLAND."

Not of the "Propositions;" to him, looking back across the years, they are of little moment now; it is the old-time faces and the vacant chairs. In the presence of that silence, how poor our striving seems!

So then, of the seven survivors of the meeting of the Association in 1851, when the original "Propositions" were adopted, all will have been heard from but Dr. Stokes.

The unanimity of sentiment of that earlier day has given place to a diversity of opinion in the very men who framed these "Propositions," which only a practical experience in their working could have brought about. With this result, varying surroundings and conditions must have much to do, and the lesson we may learn from it is that good men, equally earnest, and alike sincere in their desire to make the best provision for the care of the insane, may honestly arrive at conclusions almost diametrically opposite concerning them. This teaching, and may we not also add as another lesson, that line of old Latin,

Quieta non movere.

Not to move things at rest? If we now attempt the revision of the "Propositions," or to add what seem self-evident truths to us, will thirty-seven years hence, see our survivors any nearer unanimity respecting them than are the survivors of to-day?

I have accordingly, speaking not now for the fathers but for myself, ventured into the realm, not of propositions, but of resolutions, two of which I propose to submit for the action of the meeting.

Resolved, That it is the judgment of the Association that no present necessity for reaffirming the "Propositions" exists.

Resolved, That we deem it inexpedient to adopt any new proposition at this time.

It will be observed that in the above resolutions care has been taken not to commit the Association to anything beyond the present hour.

Whether it may be expedient or no for another generation to enunciate their highest truths as propositions we leave to that generation to decide. It will then be their responsibility, not ours. And since we cannot bind that coming generation, if we would, to what seem to us to be right and true ways, we propose no new dictum. And for the generation that has passed, we have too much veneration for the noble men that composed it; too much respect for what were living truths to them to permit any indignity to the ashes in those urns. And we the more willingly neither reaffirm nor deny these "Propositions" since we are in no danger of mistaking for living canons what have long since passed into mere historic truth and "innocuous desuetude."

This seems trite and self-evident now, and yet only four years ago when at Philadelphia I attempted, in a conservative way, to say something eulogistic over their remains, I startled some of my associates who had not realized until that moment that the "Propositions" were dead.

A dead letter as canons of authority I mean, but as historic truth, as formulated methods, as the sincere utterance of men whose deeds kept ever in the van of their words, they are living still, and as such they will remain. We would not remove them, nay we could not if we would; for this which has passed into history now was living truth once, truth that has crystallized into corner-stones on which we are to go on building, higher and nobler still I hope, but only higher by reason of these stepping-stones of the past on which we rise. "Remove not the old land-marks," for living, palpitating hearts, with a sense of duty and a singleness of devotion that we shall do well to emulate, have been built into these very foundation walls.

Well said Dr. McFarland in the letter I have just read, "Our work is immortal, yet we who have it to do, are but passing shadows." Let us see to it, oh my brothers, that we build not unworthily, so that when this great work for humanity is finished, whose corner-stones have been laid by hands other than ours and whose battlements will be fashioned long after we have done working, it shall all be found "fitly framed together" and destined to endure until it shall be changed for that other temple whose walls are—

Jasper first, and second sapphire,
The rest in order—last an amethyst.

On motion of Dr. Everts, the resolution submitted by the Committee on the "Propositions" was taken up for consideration.

Dr. Gundry offered the following resolution:

Resolved, That this Association revoke the assent heretofore given to the "Propositions" of the Association; that in the opinion of this Association it is inexpedient to adopt any authoritative statement of views upon the subject connected with the interests of the insane, and that, as the composition of the Association is constantly changing, it is better to discuss fully all these questions, leaving to each member to judge of their

value and applicability to the peculiar circumstances he is called to take action upon.

Dr. Godding offered the following substitute:

Resolved, That it is the judgment of the Association no present necessity for reaffirming the "Propositions" of the Association exists.

Resolved, That we deem it inexpedient to adopt any new propositions at this time.

On taking the vote the substitute of Dr. Godding was adopted by a vote of twenty-one to thirteen.

DR. CURWEN: I wish to say a word. The Association will bear me witness that I am not in the habit of boring them with long speeches. As one of the original members who voted for the "Propositions" I am firmly of this opinion, which I have stated on previous occasions, that it is not our duty to remove the old landmarks which the fathers have set, and it is our duty within these landmarks to improve to the utmost of our ability every inch of ground that can be covered.

Now I put as the landmarks of the ground on which we stand and which we are obliged to cultivate, four points—Faith, Hope, Charity and Good Works. These constitute the four boundaries, and to assist us in helping on with those I would put four others. First we should have Insight, then we should have Courage, Endurance and Aspiration.

Now taking the matter as it stands: I am not going to refer to special propositions. I wish to say this—that I am a firm believer in those "Propositions." I voted for every single proposition in the book except one, and that was the one regarding the enlargement of hospitals. That proposition was adopted at a meeting when only thirteen were present, and at the last two hours of the meeting, after the majority of the members had gone home. As for the others, I insist that in my view of the case they were correct and right, and I voted for them fully and clearly. I wish here to say that to my mind, whatever views gentlemen may entertain in these matters, it is their clear duty to live up to everything to improve the condition of the insane. This is the point I wish distinctly to make—that, no matter what their peculiar views may be, they are to cultivate within the four landmarks I have recited, and which constitute the boundaries laid down by the fathers, every inch of ground, and to the very highest point to which it can be cultivated. That involves whatever each man may think best under the circumstances. No man can say what another man will raise on his ground, because one man may have a farm in one part of the country and another in another, but at the point at which he is he must do everything he can for the benefit of the insane. Now, as my old friend and preceptor, Dr. Kirkbride, used to say, the hospital is like a row of houses; every family must have its own arrangement, so every ward should be by itself and made by itself; and there is no man living to-day, nor did any man ever live, who insisted more on everything which could be done and worked harder to find everything which could be made available for the purpose of improving in every way the condition

of the insane, by occupation, amusement, instruction and everything of that kind. This is the point we must all aim at and strive to surpass.

Dr. Hurd offered the following resolution, which was adopted:

Resolved, That the thanks of the Association be tendered to Dr. Everts for his very able and exhaustive report upon the "Propositions," and that he be requested to prepare a paper to be read at the next annual meeting, upon this subject, giving the results of his best thought on the organization and arrangement of institutions for the insane.

Dr. Fisher, from the Committee on Time and Place of Next Meeting, stated that they had agreed to report in favor of Hartford, Conn., on the first Tuesday of June, 1889.

A motion was made to strike out Hartford and insert Chicago, which was carried by a vote of twenty-one to thirteen, and the report, as amended, was adopted.

On motion the Association adjourned to 8 P. M.

The Association was called to order at 8.30 P. M., by the President.

DR. STEEVES: Before the regular work of the session is commenced I desire to say a few words. When a paper is read here and discussed, it is usual to afford the writer an opportunity to reply if he wishes to do so, especially when criticism has been offered. After the discussion on my paper last evening, the business next in order was so rapidly proceeded with, that I was deprived of the usual courtesy of closing the discussion.

I wish to reply to remarks made by Dr. Andrews. He protested against what he conceived to be a confession or admission that asylums were hot-beds of phthisis or tuberculosis. I do not think, sir, that his interpretation is a fair one. It is true I did say that the conditions of asylum life favored the production of phthisis, but I added that insanity itself did not necessarily increase tuberculosis. That proposition I maintain is a correct one, and capable of undoubted proof.

DR. CHAPIN: The session of the evening will be devoted to the reading of obituary notices. An obituary notice of Dr. Goldsmith will now be read, by Dr. C. H. Nichols, of New York.

MEMOIR OF WM. BENJAMIN GOLDSMITH, M. D.

Among Dr. Goldsmith's paternal ancestors were several clergymen. His father after graduating in arts and letters, with the first honors of his class, from the University of the City of New York, and in theology from the Union Theological Seminary in the same city, spent forty-three years

in the ministry. His second, last and eminently successful pastorate, which was closed by his death, was of thirty-six years' duration. An obituary article which appeared in a public journal soon after his death and has the marks of disinterestedness and ability, says that, "possessing a judicial mind, his counsel was often sought, and the wisdom of his advice was constantly recognized by his brethren. He was a man of very positive opinions, but had no conflict with those who thought differently. He was careful not to wound the feelings of any."

Dr. Goldsmith's mother, born McCrea, was, in the paternal line, of Scotch descent. Her great-grandfather, Rev. Jas. McCrea, was for many years "an able and successful minister" in the Colony of New Jersey. One of the sons of the latter was a colonel in the Colonial Army, two others entered the British Army, one of whom rose to the rank of major-general, and his youngest daughter was the beautiful Jane McCrea, whose murder by an Indian Chief at Fort Edward, on the Hudson, in the summer of 1777, will ever excite emotions of distress and pity in the heart of every reader of the sad story of her tragic fate. Mrs. Goldsmith's father was at the time of his death, in 1830, a member of the Assembly of the State of New York.

The subject of this memoir was born in Bellona, Yates County, N. Y., January 11th, 1854. As far as I have learned, the most distinguished traits of his childhood were, using the language of my informant, "a strong will and a disposition to believe nothing because others did, but to investigate for himself. When once he had decided that a thing was right and true, however, he accepted it heartily and without reserve. He also had a great calmness and power to control others, which made him a leader even among those older than himself."

The common school of the village and home instruction, including his father's library, were his only educational advantages until at the age of fourteen, he entered the Boys' Academy in Canandaigua, where he fitted for college, under the care of Prof. Noah T. Clark, long the able and efficient principal of that institution. In an obituary notice of Dr. Goldsmith contributed by Prof. Clark to a local paper, he says, "An incident in the early life of Dr. Goldsmith, occurring while he was a student in our Academy, revealed the secret of the great power which was so abundantly manifest in his subsequent life. The incident did not come to my knowledge until he had entered upon his professional work." It seems there was among the students a fiery young man who when angered, as he often was, became a terror to all about him and so furious as to threaten the lives of those who had offended him. "On one such occasion Goldsmith went into the hall and found the students fastening themselves into their rooms to protect themselves from his violence. He walked quietly through the hall, and meeting the angry man, put his strong hand gently on his shoulder and said in a soft commanding tone, 'Sit down on my knee until you get over this passion,' and his murderous, violent spirit was at once subdued, and he sat there as in the spell of a mighty unseen power. It was this power, strong, magnetic and gentle, that gave to Dr. Goldsmith his great success in his treatment of the insane."

While at the Canandaigua Academy young Goldsmith frequently called at Brigham Hall to inquire after a patient in whom his mother was

interested, and in this way came under the notice of Dr. John B. Chapin, then one of the physicians of that institution, who writes that "he was as a boy reserved, manly, shy, and had an honest, earnest face," and he, Dr. C., "came to feel an attachment for him then."

At the age of sixteen he entered Amherst College, from which he graduated in 1874, at the age of twenty. He pursued the regular course of study, but gave some special attention to chemistry. The Hon. Julius H. Seelye, president of the college, writes of his characteristics during his college life, that he was "quiet and somewhat retiring, but genuine and strong, doing his work with steady fidelity, but without self assertion—a sincere man rather than an evidently brilliant one—he left upon the college a profounder impression of his moral earnestness than of his intellectual force. But, as I have often noted in other cases, this was the basis of a very successful career, with already large results, though so brief. His life in his profession, though it could not have been predicted by his college associates, could hardly be a surprise to those most intimate with him."

As his college course drew towards its close it is evident that Mr. Goldsmith began to seriously consider what his life-work should be, and it is altogether probable that his accidental visits to Brigham Hall and acquaintance with Dr. Chapin while he was fitting for college, made a deeper impression upon his thoughtful mind than was apparent to others, and led to his entering upon the study of medicine with a view to the career of a mental alienist, for in the course of the vacation between his junior and senior years, accompanied by his father, he sought the opinion of Dr. Chapin, then at the head of the Willard Asylum, as to the probability of his success in such a career. Having the warrant, as he without doubt properly regarded it, of Dr. Chapin's favorable opinion upon this important point, in the autumn of 1874, after graduating from Amherst, he entered the Willard Asylum as a medical student and dispensing clerk, where he remained until the fall of 1875, when he matriculated in the College of Physicians and Surgeons of New York. He also spent at Willard the interval between the two courses of lectures he attended, and in the spring of 1877 he received the degree of Doctor of Medicine, for which he passed a most satisfactory examination. During his course of study for his medical degree he exhibited, as one of the professors of the College has informed me, the same diligence, fidelity and quiet, moral earnestness, that had characterized him at Amherst, but it was in the course of nature that with more maturity and study his mind had developed increased power, and the faculty of medicine appears to have been more impressed with his intellectual force than the faculty of arts and letters.

After spending a few weeks as an interne of the Presbyterian Hospital of New York, Dr. Goldsmith on the 1st of May, upon the special recommendation of E. C. Seguin, M. D., then Professor of Neurological and Mental Diseases in the College of Physicians and Surgeons, received the appointment of Second Assistant Physician of the Bloomingdale Asylum. When I took charge of that institution on the 7th of July, 1877, I found him in that position and began his personal acquaintance. I also found that he had already begun a diligent, systematic study of the cases then under care

and of others as they came in, with respect both to their nature and treatment, and to the form of disease which each case illustrated, by which he rapidly gained both a theoretical and practical knowledge of mental disorders. When he *finally* left Bloomingdale, early in 1881, his knowledge of the English literature of insanity and of the practical value of the views of different authors, was very extensive and thorough. He did not however neglect his patients for study, but in making his acquisitions in the literature of his profession he was evidently stimulated to verify and apply what he read to his practical duty—the comfort and relief of the sick.

By the marked quietude and composure, the diligence and fidelity, the ability and sound judgment and the care and completeness with which he discharged every duty, he soon won my entire confidence and very high personal regard. I do not recollect that he ever pleaded lack of time or strength to discharge any regular or special duty expected of him, or that he ever neglected the thorough, painstaking performance of all his duties according to his instructions and to the best of his knowledge and ability. His sympathy for patients on account of the sufferings and privations of their sickness and his consideration for their feelings were quick and unfailing, and always delicately and unobtrusively manifested. It follows that he was never stung by their abusive and often plausible accusations, nor led into the use of harsh, much less resentful expressions respecting them or their conduct, in or out of their hearing. On the other hand, the respect with which his kindness and simple, manly dignity inspired them, evidently went far to restrain many patients—particularly women—from the indelicate exhibitions of the animal nature to whose powers the loss of reason often relegates our composite humanity.

Not long after I took charge at Bloomingdale he (an ambitious young man without fortune and enjoying his first remunerative employment) one day, most unexpectedly to me, handed me his resignation, saying that he thought that every superintendent should have the opportunity of nominating his own assistants. In returning it to him I thanked him for the opportunity he had afforded me of gladly retaining him as my own nominee in the position he occupied. As far as I ever knew, this act, manifestly proper under all similar circumstances, was not suggested to his mind by any example with which he was acquainted nor by any friend or authority, but was prompted by that just sense of the proprieties of every situation, with which he was so remarkably gifted.

With the conviction that his usefulness in the sphere of his profession which he had chosen might be enhanced by observing the arrangements and methods pursued abroad in the treatment of the insane, Dr. Goldsmith resigned his position at Bloomingdale, in August, 1879, and in September sailed for England, where he first spent about six months as a volunteer assistant to Dr. Major, of the West Riding Asylum, in Yorkshire; then spent a few weeks, in study, mostly in London, and in travel, and finally held a volunteer position on the staff of Dr. Clouston, of the Royal Edinburgh Asylum, when, a vacancy in that position having occurred, he was invited to return to Bloomingdale to take the place of First Assistant.

Physician. He accepted the position, and returning at once from abroad, entered upon its duties on the 15th of September, 1880; and in his second period of service at Bloomingdale he displayed all the high qualities that had so eminently characterized him during his first connection with the institution, with the added ability in his work which came from a broader culture in its duties, and without in the slightest degree vaunting the high value at which both Dr. Major and Dr. Clouston had estimated his services, nor the rare and unusual personal attentions he had enjoyed while away.

A vacancy having occurred in the office of Medical Superintendent of the Massachusetts State Hospital for the insane, at Danvers, Dr. Goldsmith was appointed to it upon the strong recommendation of his medical and other friends, both in this country and in Great Britain. He was then barely twenty-seven years of age, and had been a doctor of medicine two months less than four years, but without either shrinking from responsibility or offensive assertion of authority, with a calm judicial mind and persistent purpose, his mastery of the medical and administrative affairs of that great establishment was soon complete.

The people of Massachusetts had been much dissatisfied with the position and the excessive cost, as they considered, of the Hospital at Danvers, and with absurd spite at what they could not help, had transferred their dissatisfaction to its administration under authorities that were in no way responsible for what they and the public, alike but in different degrees, condemned. This blind condemnation had become somewhat exhausted when Dr. Goldsmith took charge of the institution, but having the confidence and support of the able Board of Trustees that appointed him and were close observers as well as co-workers in its able and prudent management, those of the public authorities and people of the State followed, and its popularity soon became equal to the former prejudice against it. It is perhaps due to the people of Massachusetts that it should here be said that they appear to fairly appreciate their great indebtedness to Dr. Goldsmith for his agency in creating a favorable sentiment on their part towards this hospital, no part of whose cost can be returned into the treasury in money. Such beneficent use as is now made of it, is the only mode of recovering the great outlay for its establishment.

While abroad in 1879-80 Dr. Goldsmith spent his whole time in Great Britain. Thirsting for further knowledge which he could not acquire while occupied with the details of a large and very active hospital service, when he had been in charge of the Danvers Hospital for about two and one-half years, believing that he had fairly established his administrative capacity and that the institution was then in such a favorable condition, both as to its reputation and actual working, that he could leave it with honor, he resigned its superintendence with a view of visiting the Continent of Europe for both literary and professional study. The Trustees, however, invited him to withdraw his resignation and accept a year's leave of absence, which he did. He spent the year in the study of the German and French languages, the examination of institutions for the insane and professional study under Westphal, Krafft-Ebing, Charcot and others.

Returning from abroad in July, 1884, Dr. Goldsmith resumed the

charge of the Danvers' Hospital and continued to superintend it with the increasing ability and usefulness that in every calling will follow the faithful applications of the lessons of study and experience, till he entered upon the duties of Superintendent of the Butler Hospital for the Insane, to which he had been elected by the Trustees of that institution to fill the vacancy created by the lamented death a short time before of their former Superintendent, Dr. John W. Sawyer. The manner in which he acquitted himself as the successor of the illustrious Ray and the sound, devoted and laborious Sawyer, is best attested by the eminent Trustees of that Institution, who in a warm but discriminating Memorial Minute, adopted by them and entered upon their records, pay him the high tribute of saying: that "He entered upon his duties here on the first day of February, 1886, and at the time of his death, had discharged them with rare professional skill, with unremitting assiduity and with singular success for the period of two years and nearly two months. In this brief period he has left upon the administration and interests of the hospital the impress of thorough and varied professional knowledge, of sound judgment, of great humanity and tenderness and of the highest qualities of educated manhood."

In an obituary notice of Dr. Goldsmith in the *Boston Medical and Surgical Journal*, the remark is made that "He had not been quite well since a professional visit to New Orleans, where he had a febrile attack last autumn, and several times of late he had spoken of feeling ill," but the writer was most unprepared for his fatal illness, having met him only three weeks before his death, when he appeared to be in higher health and spirits than usual, and expressed himself to that effect. Having for several days had what he regarded as an ordinary cold he, on Wednesday, the 14th of March, took a long ride in the saddle (his favorite exercise), and on his return complained of feeling more ill than he had done before. He however fulfilled a social engagement that evening. On the morning of the 15th he drove out for a short distance on a business errand. On Friday afternoon his physician visited him for the first time, and informed him that he had pneumonia, when he remarked: "One thing is against me—I have a bad heart."

The disease appears to have been severe and attended with much pleuritic pain, but not to have been pronounced hopeless, when on the morning of the 20th, after himself looking over the nurse's night report, he sent for his sister, and telling her he "thought the crisis had come," and adding that he "hoped to get well, but that there was doubt" whether he should do so, he began, with the very sublimity of deliberate calmness and courage, to make his preparations for death, and in those last fleeting hours of life, in great weakness and pain, sent kind and appropriate messages to his particular friends, indicated the disposition he wished made of his effects, and gave directions for his funeral, which, by his express desire, was conducted with great simplicity and without eulogistic remarks. His brief but great life came to its end at nine o'clock on the morning of March 21st. He is buried in his native hamlet, at his own request. His mother and sister, to whom he was most devotedly attached, survive him. He did not marry.

An antithesis of the great problem of "squaring the circle" constantly

recurs to me in seeking an appropriate illustration of the qualities of Dr. Goldsmith's character and mind. The degree to which he rounded the squares and angles of human character was phenomenal. His character was so marked by fullness and rotundity that it might have presented a sameness of aspect had not his enterprise and exquisite taste given it abundant light and shade.

It is easier to analyze the qualities of a mind whose strong elements were fewer and more dominating than were those of Dr. Goldsmith. He could not lay claim to genius whose almost intuitive acquisitions and powers are apt to be eccentric and fitful, but did possess a receptive and capacious mind that was capable of every solid acquirement; and by the diligent, unremitting use of his time and opportunities—some of them self-created—both of his visits to Europe for professional observation and study were made upon the means he had accumulated at the time they were undertaken—his professional and general culture was remarkably wide and thorough, in view of his age and of his having, with the exception of the two years he spent abroad, from the day of receiving his doctorate to his death, spent almost every working hour in the assiduous discharge of the responsible and absorbing duties of practice and administration.

While he loved knowledge for his own sake he acquired and digested it with practical aims, and having a retentive memory, his intellectual armament was well at his command. With no prejudices or tendencies to extreme views he possessed in a remarkable degree the power of distinguishing what was true and applicable, in considering any subject, from what was speculative, or false, or inapplicable. It follows that he usually reached wise conclusions and rarely had reason to reconsider them. Without elementary incredulity or captiousness he displayed from boyhood what I regard as a constitutional sense of owing it to his individuality to "try all things and hold fast that which is good," and it was the natural habit of his mind, as sleeping and working were the habits of his body, to base his opinions upon his own examination of other men's facts and reasonings and such original light as was within his own reach. He respected the opinions of authors, but did not base his own upon their *ipse dixit*. Having formed his opinions with care he held them with contentment and some tenacity, but without dogmatism, until new light demanded their modification.

His sense of honor was one of the dominating elements of his character. Indeed, it seemed to be the sum of its primary moral elements. In his childhood and youth he honored his parents, teachers and superiors by love or respect, and by obedience, truth and fidelity, without any undue surrender of the claims of his individuality. Later, quickened and informed by an enlightened conscience, it was the strongest underlying principle of his continued assiduity in fitting himself for the duties of life and of his faithfulness in discharging them—of his obedience, loyalty and efficient support as an assistant, and of his zeal, justice, consideration and patience as a superintendent. There was never a truer man to his friends. I have known him to be at much pains to serve them with respect to interests of which they had no knowledge; and such was his fidelity to

this principle that I cannot conceive of his having ever neglected such service when he knew the occasion for it.

Dr. Goldsmith's moral and physical courage were not less remarkable than his other effective principles. If an eminent specialist in nervous and mental disorders (Dr. C. F. Folsom), in saying that he had "intellectual courage" meant that he did not hesitate to follow the convictions of his mind against musty error or popular prejudice, I quite agree with the declaration, though it seems to me that the power of doing so lies as much in this effective principle as that to repel the seductions of ill-founded popularity or to pursue the thorny path of right against popular condemnation. An eminent friend of another profession writes of him that "he was a brave man. He had great physical courage. I have seen it often put to the test. He had great moral courage also. Evil never approached without finding his blade unsheathed." In following his convictions, however, against those of other men, he displayed so much respect for their right and sincerity of opinion and so little of the spirit of superior wisdom as never to wound a friend nor make an enemy. Neither his moral nor his physical courage was attended with the slightest bravado nor with other demonstration except as the occasion for it arose. When it did arise, however unexpectedly, he always appeared to be equal to it. Early in his superintendency of the Danvers Hospital, a patient, in attempting to escape from a pursuing attendant, fell and killed himself. The matter was undergoing investigation by a Committee of the Legislature, a member with as little sense as breeding, after making some absurd criticisms of the occurrence, asked Dr. Goldsmith a question that implied uncandid self-defence on his part, when he quietly but firmly declined to answer any further questions put by that member. He was supported in his refusal by the other members of the Committee. When Dr. Goldsmith's youth and inexperience at this time and the great respect in which he held the Committee as a sub-representative of the sovereign authority of the State are considered, this must be regarded as an act of moral courage as high as it was rare.

There is not in all history that I recall a sublimer display of moral courage than his prognosis of his imminent death twenty-four hours before it occurred, and the resignation and calmness with which he made preparations for it. Several instances have been related to me of his display of physical courage, but, as anyone well acquainted with him would have expected, they were not characterized by the slightest fool-hardiness nor by any insensibility to the danger he encountered.

That magnetism which attracts men to each other was one of the remarkable attributes of Dr. Goldsmith's moral constitution. I have never known a man who made more fast friends than he did, and I never knew him to lose one, so constant and true was he to the obligations of friendship. But he never loved at first sight. The magnetism that drew other men to him was not marked by any sudden, brilliant, overpowering displays of energy. Like that of the pole, it was quiet, unremitting and unrelaxing. He therefore formed friendships slowly, not because of a distrustful, much less a cynical spirit towards men, but partly, as I think, from some natural reserve and partly because it was the actual and natural

habit of his mind to prepare for every proposed undertaking and every event and relation that concerned him by deliberate observation and consideration. When his friendships were formed, their stability and fervor were in proportion to the depth at which they had been planted and the slowness of their steady growth. The poet Whittier, who resides not far from the Danvers Hospital, writing on the day of his death, to a mutual friend, says: "I feel as if I had lost a brother; he was such a true, good friend and neighbor." An appreciative lay gentleman, who made his acquaintance after he graduated in medicine and who made the journey from New York to Providence to attend his funeral, wrote me that "the grief of every one, from Trustees to the laboring men on the place was most sincere." I forbear to make other quotations upon this point, lest they should unduly prolong this paper. I cannot, however, proceed without adding that a large number of letters have been put into my hands, several from abroad, in which, in addition to the warmest eulogiums upon his character, ability, attainments and services to humanity, there are the most ardent expressions of personal affection for him and of grief for his death.

Dr. Goldsmith was ambitious and appreciated his attainments and what he had accomplished. He also appreciated the good opinion of his fellow-men, as I believe all men do who are in sympathy with the highest aims of life. Without prudishness or pietism I believe that his life presented an example of almost faultless purity and correctness. As Dr. Charles F. Folsom has said of him, he was "a gentleman in the best sense of that much abused word." He never forgot nor omitted the consideration and courtesies due to his associates, high or low. His manners were not graceful, but correct. He had a thorough acquaintance with the usages of polite society and never failed to observe them. These traits and his wide information made him a favorite in the best social circles.

Having briefly presented the history of Dr. Goldsmith's short, useful and noble life in narrative and analytical aspects, with such quotations and observations as seemed appropriate to the period of his life or element of his mind under consideration, and believing that it will do his memory better justice and be more satisfactory to the audience I address, I will here let other witnesses bear testimony to his character as one of effective ability, usefulness and worth. I shall not, however, quote any sentiment which I do not fully endorse. The President of this Association, Dr. John B. Chapin, who, as you have been informed, had known him from the age of fourteen, and has ever since been his warm friend and, since the close of his junior year in college, his frequent adviser, writes: "His opinions were honestly formed, and he was content to entertain them. He was not aggressive nor combative, but was mild in his manner, gentle towards his patients, considerate of the feelings of others * * * and of dignified deportment. At an early age he had the broad culture and maturity of judgment that as a rule men only acquire at a later date in their lives. He was faithful to all trusts and to the highest conceptions of his responsibilities. He possessed in the largest sense the power of eliminating from any subject the elements necessary to a wise conclusion. We have met with a great loss."

Dr. W. A. Gorton, who was his assistant for several years, and then his successor at Danvers, and has now been appointed to succeed him at the Butler Hospital, probably knew more of his daily life, official and personal, since he assumed the responsibilities of the direction of an institution for the insane, than any other person. He writes: "No one could meet him without feeling at once a sense of his exalted manhood. Not only was he a gentleman in the highest sense of the word, but there was in him so strong an element of personal purity and integrity that it impressed itself irresistibly and from the first upon all who knew him. His ideal of life, never obtrusively manifested, was high, and in all his daily relations he was true to it. In the performance of the duties of superintendent he was the embodiment of justice and of that kindly dignity which enforce obedience, loyalty and respect. No duty was small enough to be evaded; no responsibility so great that he ever sought to escape it. His judgment was wonderfully accurate, and never hasty. His patience was tireless, and so great was his kindness that he sometimes seemed willing to suffer imposition rather than give pain to a wearisome visitor."

In an obituary notice of Dr. Goldsmith in the *American Journal of Insanity* it is stated that a former Attorney-General of Massachusetts and now a Judge of the Superior Court of that State, said of him, that he "is an ideal expert witness. His opinions are unbiased and deliberate, his knowledge is extensive and accurate, and his honesty and sincerity of character are so impressed upon all who hear him, that his testimony is almost irresistible in weight."

I will close these quotations with a few other words from Whittier. He writes, "Let it be the consolation of his friends that * * * his life, though short, was so rounded and complete; so full of worthy achievement and good works."

We shall do Dr. Goldsmith's memory scant honor and ourselves much injustice if we only regard his exalted character with wonder and admiration. His life was an instructive one to all men, but particularly to us as physiologists and psychiatrists. If, as I believe, heredity has always the potency of the character that is built upon it, the converse is likely to be true and is so in fact. According to circumstances and within moderate limits character may be better or worse than the heredity from which it has upgrown, but no training will make Websters of the sons of imbeciles nor Howards or Dixes of the children of the selfish and depressed. In education the stream of individual human life may rise higher than its sources, but in capacity and character it rarely does so; and when it does it is always liable to fall back to the level from which it sprung. These principles, whose observance is so important to the development of our race, the obligations of our calling require us to study and practically enforce in every proper manner. Dr. Goldsmith's ancestors on both sides appear to have been strong, intellectual and cultivated people of the upper middle class. They do not appear to have reached those heights of wealth, power and luxury at which degeneracy is apt soon to begin.

His father was noted for his sound judgment, high sense of honor and positive opinions, which he held with firmness but not in an aggressive or contentious spirit. His judgment was so sound as to be in much

ERRATA.

On page 698, in ninth line of fourth paragraph, read "depraved" instead of "depressed."

On page 699, in sixth line from bottom, after the word "nature," read, "with respect to mental and bodily capacity, which it is an idle sacrilege to attempt to exceed."



request in the Church and neighborhood. If nothing had been known of his father his son would have been graphically described in the same words, "the child is father to the man."

The boy Goldsmith early began to investigate for himself and to show the bent and power of his mind—his capacity for mastery and achievement in a learned profession. The lesson is, that when called to advise with reference to the career of the sons of ambitious parents, we should not send a boy to college who should go to the flail or the hammer or the yardstick. How many boys are doomed to be miserable failures in the professions who might have been prosperous and happy in cultivating and developing a Western farm! And yet the best heredity is only a capacity for development, and no one can too highly appreciate or be too grateful for such an excellent training as Goldsmith enjoyed. Otherwise he might have only been a "Village Hampden."

The other lessons of Goldsmith's life and character are for self-application. If we lack the capacity, receptiveness and love of culture that he exhibited—if our sense of honor in all its nicest applications in our intercourse with our fellow-men be not as quiet and dominating in us as it was in him—if neither our moral nor our physical courage be equal to his—if our calmness and devotion to duty, our politeness without sycophancy and our gentleness without weakness, be inferior to his, the responsible positions we have severally attained forbid the belief that by the faithful practice of his industry and emulation of his virtues we cannot more or less enhance our usefulness in our most responsible calling, and further exalt that good name among our fellow-men to which it is both our duty and, I doubt not, our ambition to aspire.

To the assistant-physicians of our institutions for the insane I wish to particularly commend Dr. Goldsmith's noble example, whether they view it from the high stand-point of duty or the low one of interest. When only twenty-seven years of age and he had had less than four years' experience in his profession he was, purely upon his own merits, recommended for the medical and executive head of a very large and important hospital situated near the cultivated metropolis of New England, with great confidence that he had the ability, wisdom, integrity and firmness necessary to rescue it from the perils and difficulties of that crucial period of its history and raise it to the enjoyment of public confidence and support. The confidence which proved to be so well founded, was based upon the ability and earnestness and the fidelity and loyalty that he had displayed as an assistant. It sometimes happens that responsibility develops unexpected practical powers, but as a rule to which the exceptions are few, as the character of the assistant so is the character of the superintendent. If the ripening life of the assistant be that of unsullied honor, earnest duty and diligent attainment, his mature powers will only be limited by the ordinances of nature, which it is an idle sacrilege to attempt to exceed.

DR. GUNDRY: I wish to lay a single flower upon the grave of our departed brother, and to acknowledge a very high sense of indebtedness to him. I met him but two or three times in my life, but I had some long and pleasant conversations with him, during which I learned, I must say, a great deal of the inner workings of foreign institutions which I had

acquired from no other person, and I always felt a debt of positive gratitude to Dr. Goldsmith. The ease and readiness with which his mind worked in certain grooves were very distinct to me. He impressed me very strongly, as was said of one eminent lawyer by another eminent lawyer, that with the great abilities he possessed, he would achieve a marked measure of success with not more than ordinary diligence, but that with the great diligence he exercised, he could have filled the highest stations.

It struck me that he was a remarkably well-poised man. I was the more impressed with his attainments as I learned to know him better. The determination which enabled the man to enter the specialty with the obstacles against which he had to contend, including the self-culture he attained, impressed me profoundly, together with the clear, unselfish resolution which he possessed.

I am very glad to have had the privilege of listening to Dr. Nichols' able address. It certainly is a valuable contribution and teaches some grand lessons. It calls to mind the peculiar solemnity with which we come to view the death of the young. It is comparatively easy to look upon the departure of one who has ripened in years, who has achieved the measure of his success and gained the acknowledgment of the world in his limited sphere. But we seem to realize the loss all the more when we come to mourn the departure of the young.

Altogether, the hearing of this eulogium has impressed me very deeply indeed, much more so than I can give utterance to in words, and brings to my mind those exquisite lines:

He taught us how to live, and, oh, too high
The price of knowledge, taught us how to die!

DR. CHANNING: Although Dr. Nichols has given such an admirable address upon the character of Dr. Goldsmith, I feel it a duty as a friend to add a final tribute to his memory. I had known him nearly eight years, and had learned to respect him more and like him better as each year elapsed. From the beginning, I was struck by the unostentatious strength of his character, and the broad and masterly qualities of his mind. He seemed to mature plans with accurate and good judgment from the very first. He was able to undertake and carry through the most delicate and difficult projects. His task at the Danvers Hospital, when he assumed its management, was no small one; and yet, with unerring sagacity and patience, he brought about such a condition of affairs as to give it a reputable position among the State institutions of Massachusetts. At the Butler Hospital his task was a different one; but here, also, strength and breadth of treatment were necessary, and in a remarkably short space of time, he accomplished results which could have been brought about by an ordinary man, only after the most persistent work.

He was essentially a man of science, and carried into all his work a scientific spirit which elevated the work itself, and improved the quality of that performed by others. He had lived patiently, he died patiently. He calmly recognized his approaching end at a period when many less wise men would have thought only of living longer.

Dr. Chapin read a letter from Dr. Cowles, of the

McLean Hospital, Mass., relative to the services and characteristics of Dr. Goldsmith.

Dr. Curwen read the following obituary of Dr. F. E. Roy, of Quebec, forwarded by Dr. Daniel Clark :

DR. F. E. ROY

Was born on March 11, 1837, at St. Anne de l'Associatere, in the Province of Quebec, Canada. When he grew up to boyhood, he pursued his classical studies at a school in his native town. He was an apt scholar, and was fond of reading in the classics, both ancient and modern. As he grew up to man's estate, he exhibited a fondness for medical research, and took his course at the Toronto School of Medicine, and graduated at the Toronto University in July, 1858. He then returned to his native province and was immediately appointed resident physician of the Marine Hospital at Quebec. Shortly afterwards he resigned this responsible position to assume medical relations with Beaufort Asylum for the Insane. At first he was appointed visiting physician (by the Governor-General) of the asylum, but in a few years afterwards he became proprietor of half its interests, which he retained until the day of his death. In 1862 he was appointed surgeon to the Battalion of Carbineers (Rifles) of Quebec. In 1881 he was appointed member of the Board of Assessors of the College of Physicians and Surgeons in affiliation with Laval University, Quebec. About the same time he was promoted to the rank of surgeon-major, in the active militia of Canada.

The Association of Superintendents, at their meeting held in New York, in June, 1883, appointed the deceased a delegate to the Medico-Psychological Association of Great Britain, held in the same year. In September, 1883, he was elected to be Vice-President of the Canadian Sanitary Association for the Province of Quebec.

Dr. Roy died on the first of October, 1887. He had been ailing for some time, but his sickness only assumed a grave form a short time before his death. He was widely known, not only in his native province, but also in other provinces of the Dominion, as well as in foreign countries. He was endowed with a most generous nature, and was of a happy temperament. He was capable of always taking the most charitable views of all matters which were open to criticism, and discouraged censoriousness.

His acquaintanceship and his friendship were identical, and in him Quebec has lost one of her best beloved citizens. Dr. Roy knew nothing of malice or bitterness in his own nature and never harbored unkind thoughts of anyone. Genial, lively and *sunshiny* in his conversation and in all his relations, he was always a welcome companion and guest wherever he went.

He was a friend to the friendless and deserving; charity never sought him in vain. He was without guile, straightforward, and a hater of hypocrisy in any of its forms. He was no dissembler himself, and proved by his charity of a practical kind that he believed in good works as a test of sincerity of purpose. He sought opportunities to extend a helping hand, and more than one friend or relative has been the object of his kindly care and protection, to whom he gave ungrudging benefactions. More than

one orphan had been the object of his care from childhood up to mature years.

He unceasingly placed at the service of the insane patients confided to his care and solicitude, the extensive practical knowledge he possessed as to the treatment of nervous diseases. It was in the accomplishment of this generous mission there were sown the seeds of disease which finally sent him to his grave. Incessant work, and the worry incident to such a responsible position in which his whole soul was engaged and from which he took little relaxation, broke down a constitution which was never very robust. He died in harness a little past the noonday of life, full of the assurance of a glorious immortality. It was his intention, at an early period, to retire from the arduous labors of so many years. His domestic life was a happy one, and he has left behind him a disconsolate widow, who will always keep the name of a devoted and loving husband in hallowed remembrance. The writer of this imperfect obituary has lost a true friend with whom he has spent many happy hours, and our Association is now required to enroll among its dead the name of one who had always taken a deep interest in its aims and work.

(Vice-President Godding having been called to the chair)

DR. GODDING: If there are no further remarks to be made in connection with the obituary notice of Dr. Roy, it seems proper that this Association should take some notice of that distinguished philanthropist, that friend of hospitals, Miss Dix, the chair calls on Dr. Chapin to introduce the subject.

DEATH OF MISS DOROTHEA L. DIX.

DR. CHAPIN: I deem it my duty to announce to the Association the death of Dorothea L. Dix, which occurred on the 18th of June last. Although not a member of this organization—not a member of the medical profession—yet she was so identified with the initial movements that led to the creation of many of the hospitals and asylums of this country, and co-operated in promoting the great objects of this Association, that it seems proper some fitting recognition of her services in behalf of the insane should have a place in our official proceedings.

In the same sense that a soldier of the cross enlists in the service of the Master, so did she consecrate her life to a work of humanity by seeking for ways to alleviate and improve the neglected condition of the most forlorn and friendless victims of human infirmity—the insane poor.

Frail in body, of dignified and gentle presence, cultivated and refined, endowed with a benevolent, winning face that bore an impress of the humane impulses that actuated her; with an enthusiasm for her work begotten of the Divine Master, she surrendered what might have been a life of ease, the allurements of the social circle she would have adorned, and engaged personally in an examination of the insane confined in noisome jails, almshouses and out-houses—"forsaken of friends, forsaken of all." Entering upon the performance of this self-imposed mission at an early period of her life, unaided and alone, with no hope or aspiration for

earthly reward or honor, she traveled through many States, and in other lands, thousands of miles, at great personal risk and inconvenience. made notes on the spot of what she observed, embodied them in the form of reports and memorials that were presented in person to governors and legislators, furnishing an array of facts and an indictment that in every case quickened the public conscience to action.

This and allied hospital work, commenced sixty years ago, she persisted in performing while her strength permitted, and when this failed it is known that it remained uppermost in her thoughts until the end. Of the superintendents of asylums for the insane, who were living when Miss Dix began her work, none are now alive; and of those who were contemporary with her in her early labors in behalf of the insane, but few now survive. To those who knew her and who still survive she is remembered as a friend and wise counselor and co-worker. It has been stated that Miss Dix was directly or indirectly instrumental in the creation and completion of thirty hospitals and asylums for the insane.

A life that was spent in unostentatious and self-sacrificing endeavors for the elevation of the poor and lowly, in efforts to lighten the burdens of others, has ended. But her work and her example remain. We respect and revere her memory. Of her it may be said, she "served God well by serving his creatures."

Mr. President, I now move that the Secretary be requested to prepare a minute to be entered on the minutes of the Association, which will record an expression of our estimate of the life and services of Miss Dix.

DR. NICHOLS: Mr. Chairman—Unless Dr. Curwen is entitled to be excepted, I was probably more familiar with Miss Dix's career than any other gentleman present, and I desire to express my great satisfaction with what Dr. Chapin has said of her exalted personal character and extremely important services to suffering humanity. Considering, as I do, that she was the most remarkable woman that the New World has yet produced, I feel quite incompetent to worthily speak of her life and work without preparation, which I have not made, not having had reason to expect that I should have occasion at this time to utter a word with respect to her; but I shall be glad to be permitted to here make record of the fact, that it was upon Miss Dix's recommendation that President Millard Fillmore appointed me Superintendent of the Government Hospital for the Insane in the District of Columbia, soon after the first appropriation of \$100,000 had been made towards the establishment of that institution. I had before been the chief medical officer of the institution of which I am now medical superintendent, but I consider myself greatly indebted to her for the opportunity of a wider career and perhaps greater usefulness than was likely to come to me.

I second the motion of Dr. Chapin.

DR. CURWEN: I cannot give proper expression to what I would like to say about Miss Dix. My acquaintance with her commenced in October, 1844, and from that day until the very last moment I saw her, that friendship continued to strengthen; and I was constantly consult-

ing with her, and she spending days and sometimes weeks with me, so that I became thoroughly acquainted with her and with the work she was doing. I merely wish to add my tribute to the high character and noble disinterestedness which Miss Dix displayed in all the duties of life, and all the work she undertook and carried through.

DR. EVERTS: I feel as though I owed an apology to the spirit of Miss Dix (if such there be), for the opinion that I once entertained of her. I felt a very great prejudice against the woman while in the army service, in the field, during the late war, on account of the class of women that, as nurses, she permitted to come to the front.

When I entered the specialty of the Indiana Hospital for the Insane twenty years ago, I found that the name of Miss Dix was a sort of terror amongst the employes and assistants that were found there; and when I received a letter from Miss Dix, announcing that she was about to visit me, I remember very well the commotion that was produced by it in the institution. Miss Dix came. She staid with me two or three weeks, and I had occasion to feel that I owed her an apology then, which I did not express; but I have felt for her the utmost respect and kindness since.

The motion made by Dr. Chapin and seconded by Dr. Nichols was unanimously adopted.

Minute prepared by Dr. Curwen, by direction of the Association, of Miss Dix:

Educated in the best schools of her native New England, imbued with deep religious feeling, tenderly alive to all the kindest sympathies for the afflicted and suffering of every class and condition, animated by a high sense of right and duty, controlled by strong common sense, Miss Dix was admirably endowed for the noble work in which she spent her life. Endued with great moral and physical courage, she was calm and self-possessed in scenes and circumstances where many a sturdier nature would have been startled. Resolute in purpose and in her convictions of truth and justice, she persevered in the face of difficulties and obstacles at which others would have recoiled, and rarely failed in what she undertook, for the reason that right and justice guided her aim and actions.

For more than forty years of the latter part of her life, the greater portion of her time, her thoughts and energies, were given to the amelioration of the condition of the insane. In the prosecution of this work she traveled over a number of the States, in whatever mode of conveyance she could find, visiting the poorhouses in every section, looking carefully into the manner in which the insane were treated, and wrote memorials to the Legislatures of several States, detailing what she had seen, and urging them to adopt the proper mode of relief by the erection of hospitals for their care and treatment. She spent weeks and often months at the seat of government of the State, seeking by personal converse with the members and the committees specially charged with the appropriation of money, to influence them to take the action which she

deemed so necessary for the welfare of the insane. The number of hospitals which she was thus instrumental in establishing cannot now be certainly known, from her reluctance to state matters bearing directly on her own labors, but it must have been about fifteen. After the institutions were established her interest did not abate, but her visits were frequent and she advised and counseled with the superintendents, encouraging them and aiding them in every way in her power; correcting false impressions in the minds of persons she met in the community, and in every way striving to interest all in the care and treatment of the insane.

Her efforts were not confined to the United States alone, but the following extract from a notice by Dr. D. Hack Tuke will show what she did in Scotland:

"Miss Dix's philanthropic labors were not confined to the States. She was interested in the asylums in Canada, and at one period was painfully impressed with their bad condition. Again, everyone who knows the history of the reform in lunacy in Scotland, knows that her visit to that country in 1855, her exposure of the dreadful state of things she discovered and her vigorous onslaught on the authorities who supported them, led to a complete revolution in the care and treatment of pauper lunatics. Those who heard from her own lips the stirring incidents of that raid upon Scotland after her return to England, and her interview with the Home Secretary only a few hours before the Provost of Edinburgh arrived in hot haste on the scene, in order to anticipate and nullify the good woman's appeal—but just too late—are not likely ever to forget her graphic story. Her clear statement of facts, her dignified presence, her obvious sincerity and her dogged perseverance triumphed. She could afford to smile at the epithet bestowed mockingly upon her, 'The American Invader.'"

Though her efforts were directed mainly to the relief of the insane, she never omitted an opportunity to do what lay in her power for those confined in prisons of different kinds, and among those of varying degrees of crime; and she never failed to use her influence with all with whom she was associated in favor of the blind, the deaf and dumb, and for the advancement of the efforts made in behalf of the imbecile children, to the end that every appliance practicable should be given for their education and advancement to higher and better conditions of mind and body. She was careful to inform herself in all matters pertaining to the condition and mode of relief of the defective classes, and the calmness of her judgment and sound practical sense made her a valuable counselor to all those striving to advance the welfare of those classes.

Standing at one time on the shore of the Island of Newfoundland, she saw a large vessel go ashore without relief or means of assistance to crew or cargo. The sight distressed her, and her sympathies were keenly enlisted in behalf of the sailor, so much exposed on that coast, on one part of which so many vessels have been lost. The enlistment of her sympathies soon took a practical direction in her efforts to obtain from the British Government the establishment of life-saving stations,

which have been the means of saving many sailors from a watery grave on that desolate coast.

Nothing was more striking in her whole life and conduct than the grace, the womanly dignity and modesty (in the highest and best sense of that much abused word), which characterized her in all her intercourse with those with whom she was called to act; and this was one great secret of the power and influence which she was enabled to exercise, not only over those with whom she was obliged to act in the effort to secure for the insane and others, those measures of relief which seemed best adapted to the purpose, but also with all those who, by reason of mental or moral obliquity, were inclined to be rude in manner and forgetful of the proprieties of language. The manner in which she exercised her influence over public men and legislators was strikingly characteristic of the traits mentioned. She never could be induced to make a public address before a promiscuous audience, but she would meet an individual member of a committee or all the members, state her views plainly, distinctly and forcibly, answer objections and argue disputed points with calmness and dignity, so as to leave the impress of her great sincerity and earnestness.

She was very persistent in everything she undertook, and spared no labor or effort to impress the truth, as it was before her own mind, on the minds of those with whom, in a measure, rested the success of her efforts, no matter what their position in the social or political sphere. She very rarely failed in her efforts to secure the attainment of the measure she had undertaken. In her plan to secure Congressional aid for the relief of the insane in the different States, she was defeated by the Executive veto, and the course pursued in after years by the member of the Cabinet who wrote that veto, intensified to the highest degree the dislike which she entertained towards him for the course which he pursued. Her intense love of country and patriotic devotion to its highest interests were strikingly manifest in the efforts which she made during the late war, for the relief of the sick and wounded. She was deceived in regard to many who offered their services to her with strong recommendations from persons in prominent positions; but while these inefficient persons impeded her work and placed her in a false and unpleasant position, it did not take away the ardent love of country which animated her in all her efforts, and which was more distinguished and earnest in contrast with the selfishness and greed of those who so hampered her work.

On motion the Association adjourned to 9 A. M. Friday, May 18.

The Association was called to order at 9.30 A. M., by the President.

Dr. Godding read a letter from Dr. John W. Ward, of

New Jersey, in relation to "Asylum Tramps," and on motion it was

Resolved, That the whole subject be referred to a committee of three to report to the next meeting of the Association.

The President appointed on said Committee, Drs. Ward, of New Jersey; Dewey, of Illinois, and Richardson, of Ohio.

On motion of Dr. Godding, the President appointed the Committee on Business for Next Year, Drs. Kilbourne, Dewey, Patterson and the Secretary.

Dr. Blumer offered the following resolution, the amendment of Dr. Nichols, "the principles embraced in said bill," having been accepted by Dr. Blumer:

Resolved, That, convinced of the soundness of the principle embodied in the bill proposed by the New York State Charities Aid Association, which provides that all the dependent insane shall be recognized as the wards of the State, and treated in State institutions, thereby removing them from the precarious care at present received in county almshouses and the insane departments thereof; the Association of Medical Superintendents of American Institutions for the Insane cordially endorses said bill, and earnestly commends it as a wise and humane measure, conceived in the true interests of the insane.

The resolution was unanimously agreed to.

On motion of Dr. Godding, the Committee on Autopsies was continued until next year.

Dr. Russell then read a paper on "Recruiting Grounds of Insane Asylums."

Dr. A. B. Richardson read a paper on "Tact in the Treatment of Insanity."

Dr. Palmer read a paper on "Employment, Training and Retention of Attendants."

The President announced the discussion of the paper as next in order.

DR. PARK: I rise to say, in regard to the paper which has been read by Dr. Russell, that there is already upon the statute books of Massachusetts, a provision allowing admission of voluntary patients to the State hospitals. There is no special annex in any of the State institutions where patients can be received, and while this provision avoids the necessity—

DR. RUSSELL: Only at the McLean—no other.

DR. PARK: At all the State institutions—the law has been in operation for the last two or three years—and while this law avoids the necessity of compelling a sensitive patient to go before the court, it also opens the bars to the reception of a large class of disagreeable subjects which we call “tramps.”

Now, it may not be out of place for me to say a few words in reference to one portion of the paper of Dr. Richardson, and that is the portion in which he refers to the architectural arrangement of hospitals for the classification of the insane.

The Worcester Hospital within the last two years has added to its building two circular wards. I believe that they are the only circular wards attached to any insane hospital in the country. When the hospital was originally constructed there was no provision made for the proper care of patients requiring special observation, and it was to fill this want that these two new buildings were erected. I have here some photo-gravures of the buildings taken from photographs which were made by a member of the hospital staff, one of the assistant-physicians. They are fifty feet, internal diameter, and two stories high. The lower story is used as a day-room and the second story as a dormitory. They were thrown out from one of the gables of the original building, and the connecting corridor used for closet rooms and clothes rooms. Some of my friends in Massachusetts make some little fun of their appearance, and have dubbed them, “The Cyclorama of Gettysburg.” But, in spite of these unfavorable and improper comments, I wish to say that they are exceedingly pleasant rooms; the intention being to provide apartments where the occupants would be constantly under observation, this plan was adopted because free from corners behind which a patient can hide. The heat is supplied by indirect steam radiation, and the ventilation by a raised platform in the center, connecting with a duct running out through the roof. At the bottom of this duct we made provision for putting in steam heat, but so far I find that the current has been satisfactory without that. In the day-room are pictures, the walls are painted and the ceiling is decorated. We have fire-places in which, during cold weather, we have an open fire; hand looms for weaving rugs, and one or two old-fashioned spinning wheels, with which the patients amuse themselves. On the whole I find that the arrangement is very satisfactory.

I remember when I visited Dr. Clouston at Morningside, he referred to something which one of his assistants had shown to some visitors. It was one of the things which he was not particularly proud of, and he remarked that “you want to show a visitor the best things of your institution.” Now, I wish to be candid, and in describing these buildings to refer to the objections, which I think are minor compared with the advantages. In the first place the name: these wards, before they were finished, came to be designated “suicidal,” and one day as I was standing near the partially completed building, one of my patients came to me and said: “Doesn’t it seem a little strange to erect a building especially for the comfort of those who prefer to ‘dwell in

houses not made with hands?" So far as I can I endeavor not to have this word used, but to call them "observation wards."

These buildings are intended to accommodate twenty-four patients each. There will be some among this number who are noisy—my patients are not as well-behaved always as some of whom we have heard—they do make a noise and they do not stay when they have been put to bed, but sometimes get up and disturb the others, so that an ideal provision for this class necessitates a smaller room, where the noisy and disturbing element can be put. These are the two objections that might be properly urged against the building I have described.

DR. GUNDRY: I agree most cordially with the paper of Dr. Richardson, but I think the Doctor has followed the fashion of a great many preachers; taken a text and very rigidly departed from it. He said very little on the subject of tact, and the very little that he did say is the point I wish to speak of. The Influence of a New Environment on the Patient, would probably characterize this paper more correctly than the present title.

He says that tact comes from education, and presupposes a study of the history and circumstances of the patient. Now, sir, tact is intuitive. Who has more tact than a young child, who knows whom to go to and whom not to approach? A person may have all the history of a patient and not be able to exhibit tact. If I were driven to define tact, I should say that tact "*nascitur, non fit*." No person born without tact ever acquires it. He must have the potentiality of tact, and I think the Doctor will agree with me that he knows some persons who, knowing nothing of the history of the patients, are yet able to put themselves in contact with them, and will influence them more than many who really have studied and know the cases. It is the power of instantaneous appreciation, which may be cultivated, it is true, but must first exist. It may become so habitual and be so enlarged—

Until experience doth attain
Something of prophetic strain.

But unless first possessed I do not apprehend it will come from any knowledge acquired of the patient. Tact is the instantaneous appreciation of circumstances under which action is required, and the setting forth of those energies applicable to that situation; it is an intuition.

The clinical advantages from environment are undoubted. We put an idea into a person's head and assist to retain it there. We call forth his inhibitory power to keep that fact from escaping him; that is the psychological law—to call up those inhibitory forces which prevail in the mental organization, to regulate the constant, aberrant forces within and around him.

Now, I would not have risen except that I desired to show my appreciation of that paper. I hope the Doctor will put a note in to show what he means by "cultivation" of tact. Of course, like every other power, it is increased by cultivation; and of course, the better the attendant knows, or is able to know, the circumstances, the better will he be able to apply that tact.

DR. RICHARDSON: I am quite confident that I was not happy in making the paper correspond exactly with the title; but I suppose the reason for that is very much the same as the reason for ministers departing so invariably and uniformly from their texts. I selected first this subject and then wrote the paper, and my thoughts led me off into other channels; and, as I could not very well fix upon a term to properly designate the mongrel affair, I just left it as it was. As a matter of fact, we all know that poets are born, not made. At the same time let me read over just the sentence, in which I allude to the principles to which the Doctor objects, and then explain my position. After describing tact, I said "to apply with any hope of success this power—" I should have said "to apply with the hope of highest success, this power, we must presuppose," etc. We all have seen individuals, some, in my experience, very remarkable instances of the possession of tact, and this is particularly shown, and is particularly prominent, in persons who have been brought in contact with the insane. At the same time, thorough education, a prolonged experience, and a careful study of an individual who is mentally disturbed, will enable that person possessing the tact, to do far more in controlling the individual than this intuitive knowledge alone, which the person may possess. In other words, just as I say here, "to apply with the hope of the highest success this power, presupposes a careful study and intimate knowledge of the individual."

DR. GUNDRY: My friend has misapprehended me entirely. Tact means application before you get that knowledge he speaks of. If you have got to wait until the patient is locked up and his attendant has learned all his history before he comes in contact with him, that is another thing.

DR. RICHARDSON: That is very true; but, having that tact, if you can have an opportunity to make an investigation and then apply that tact, there will be better results.

DR. NICHOLS: It is a very philosophical paper.

DR. EVERTS: I think every member of the Association approves of the sentiments and conclusions of Dr. Palmer's paper. No doubt our weakest side in all our hospital or asylum work is the "attendant business."

In regard to Dr. Richardson's paper, it was to me a source of pleasure. I listened with a great deal of admiration to the enthusiasm of youth; the individual aspiration and bright anticipations of what is to come; and I could not help thinking, while he was reading, of the remark attributed to Sir Humphrey Davy, who on being asked what he regarded as the greatest discovery he had made, said, "Mike Faraday." And that same sentiment might be applied to our friend Gundry, the greatest discovery he has made being Dr. Richardson.

Dr. Callender, from the Committee on Resolutions, made the following report, which was unanimously adopted:

For the second time in a history of forty-four years, the Association of Medical Superintendents of American Institutions for the Insane has held its annual meeting in the State of Virginia, once at Staunton, the seat of the labors of the late lamented and beloved Dr. Stribling, who was of its original thirteen founders, and on the present occasion, at a point in the vicinity of the institution at Williamsburg, the oldest in America, having been established in the colonial year 1773. In addition to the professional interest in a meeting of full attendance, elicited by an ample number of able papers on scientific and practical subjects, which were further elucidated by valuable and instructive discussions, its members have felt the influence of inspiring memories of the historic region, rich as it is in deeds illustrative of valor and devotion ennobling to the American name.

On the eve of adjournment, the Association records its thanks to Dr. J. D. Moncure and the Trustees of the Williamsburg Lunatic Asylum, for the invitation to visit that institution and observe its successful rehabilitation from the calamity by fire a few years since, which destroyed a large portion of its buildings, and to congratulate the management on its excellent present condition after an ordeal of that character. The members appreciated very highly the charming vocal and instrumental concert afforded in the amusement hall of the asylum, and the collation with which the visit was concluded, and the general courtesies tendered by Dr. Moncure and his assistants.

The Association also expresses its acknowledgment of the reception given at the Hampton National Soldiers' Home by Col. P. T. Woodfin, the commandant, and his escort through its buildings and beautiful grounds; and in an especial degree to Gen. S. C. Armstrong, Principal of the Hampton Normal and Agricultural Institute for the education and equipment in artisan pursuits of Indian and Negro youths, for the interesting and thorough manner in which he explained the operation and results of the system.

To the manager of the Hygeia Hotel at Old Point Comfort, the Association is indebted for the commodious and elegant apartment in which its sessions were held. The admirable service in every respect of that noted hostelry, contributed greatly to the personal comfort of the members and their families, and to the success and enjoyment of the annual meeting.

Lastly, the Association votes its appreciation of the labors of Chairman Dr. W. W. Godding and his associates of the Committee of Arrangements for the Forty-Second Annual Meeting, and of the complete manner in which that duty has been performed.

J. H. CALLENDER, Tennessee.

P. O. HOOPER, Arkansas.

G. A. BLUMER, New York.

On motion of Dr. Everts the Association then adjourned, to meet at the city of Chicago, on the first Tuesday of June, 1889.

After adjournment it was ascertained that the Ameri-

can Medical Association had resolved to meet in Newport, R. I., on the first Tuesday of June, 1889, and notices were sent to each member of the Association, notifying him of that fact and asking if a change of the time of meeting to the second Tuesday of May would be agreeable, and answers were received from a large majority favoring the change; so that now the Association stands adjourned to meet in Chicago, on the second Tuesday of May, 1889.

JOHN CURWEN, Secretary.

On Granulations of the Ependyma.*

Observations by R. BARONCINI, M. D.,

Physician of the Asylum for Insane, Inola, Italy.

TO every asylum physician who has devoted due attention to necroscopic observance, the article which we below reproduce from the July number of the above named valuable periodical, cannot fail to be unusually interesting. It is much to be hoped that in the present day *post-mortem* research is practiced on a larger scale in America than it was thirty years ago. The writer of these lines well remembers the surprise with which he discovered, at a meeting of the Association of Medical Superintendents, a third of a century ago, that the practice was "honored more in the breach than in the observance,"—nay, in truth, solely in the breach. The excuse offered for this neglect, was that the friends of deceased patients would not tolerate any such scientific indulgence. The writer had just before visited several large American asylums for the insane, in every one of which grievous complaints were made of the overcrowding caused by the admission of so large a proportion of "*foreigners*;" and as he was quite familiar with the same fact in his own institution, he could not but regard the explanation as very meagre; for in all probability not one in three of these very foreigners had, in this country, any friend or relative to look after them; therefore, American asylum physicians had a great advantage, in this respect, over those of the old country,—an advantage, indeed, which, if we may judge from present annual reports, is largely and profitably availed of by several distinguished members of this specialty.

The pathological finding of which Dr. Baroncini treats,

*Translated by JOSEPH WORKMAN, M. D., Toronto, Canada, from the *Archivio Italiano*, Milan, 1883.

is one that must have been not infrequently noticed by asylum necroscopists; it will therefore be both interesting and instructive to readers of this class, to learn the views entertained by the distinguished foreign authors quoted by Dr. B——.

As it would be unfair towards the author to reproduce only extracts from his article, it is here presented in its entirety:

“An accurate examination of the alterations which are met with on the ependyma of the cerebral ventricles, may perhaps throw some light on the pathological anatomy of some forms of mental alienation. Having collected the notes of the numerous necroscopies made in this asylum (Imola), we venture to submit a few observations on ependymitis granulosa to the readers of the *Archivio*, as a simple contribution to the study of progressive paralysis, (*genl. paresis*.) After premising some brief remarks on the anatomy of the ependyma, it appears to us to be of some utility to glance over the history of these granulations, and all the more so as but few in Italy have engaged in this study; so that in order to obtain information respecting them, recourse must be had to foreign journals, which are not accessible to all studious persons.

The membrane which invests the cerebral ventricles was regarded by the old anatomists as a continuation of the *pia mater*, which, having, according to their view, lost the greater part of its vessels, here assumed the characters of a serous tissue. When ulterior observations showed, on the surface of the cerebral cavities, an investiture of epithelial cells, anatomists denied the existence of a special membrane, and held that there existed over the nervous fibres only an immediate stratum of epithelium. This doctrine, which was first upheld by Purkinje and Valentin, was defended by Henle. On the other hand, the pathologists having observed that in the ventricular walls there are produced inflammatory processes, in every respect analogous to those usually met with in

serous tissues, held on to the belief that the surface of the cerebral cavities is covered by the meninges. Virchow demonstrated that neither the arachnoid nor the pia mater is prolonged into the surface of the ventricles; that on this surface there is not any serous covering; that there is an epithelial stratum which lines both the encephalic cavities and the central canal of the medulla; and that immediately beneath it, there is a slender connective tissue, identical with that which involves and unites the nervous elements, and which he calls *neuroglia*. He therefore concludes that, with strict exactitude, there does not exist a true and proper membrane, but merely an epithelial veil. To this stratum the name *ependyma* (*vestis superior*), remains applied; a denomination which some writers have ascribed to Virchow, others to Valentin, in manifest error, since Virchow himself, in his book on *cellular pathology*, expressly states that this term was given by Purkinje. Professor Lachi, of Perugia, in his learned work, recently published, defines the extent and the boundaries of the cerebral ependyma, correcting erroneous observations, and establishing very important new anatomical facts. We do not desire to enter into a diffuse report of his researches, because the nature of our present space does not so permit; it suffices that we direct the attention of the reader to it.

Histologists are not in accord in their descriptions of the anatomical characters of the ependyma; and we shall not stop to relate the various results to which they have arrived; it will suffice to state the description given by some modern observers, as this seems to us to be, as is wont to be said, the latest word on the subject. Schopfhagen writes thus: "The ependyma is composed of two layers, one superficial and the other deep; the former is formed of cylindrical epithelia from which there depart delicate and very slender prolongations which dip down into the layer beneath; the latter is constituted of fibrillar tissue, among which numerous round and oval cells are found."

Dr. Marchi, following the classic studies of Prof. Golgi on the minute anatomy of the central nervous organs, has found that the ependyma consists of cylindro-conical cells, the most slender part of which is continued in a prolongation, from which there proceed numerous ramifications, which are sometimes lost in the nervous substance; but the majority of them proceed to be inserted into the walls of the vessels. Prof. Lachi states that the epithelium of the cerebral cavities is, in the adult, of only one layer; whether it is considered where it invests the solid walls, or is examined in connection with the web of the choroid plexus, however much it may change in form, according to the various regions.

As to the physiological importance of the ependyma, but little is known. Ripping, setting out with the conception that the surface of the ventricles, during foetal life, is furnished with vibratile cilia, which fall off soon after birth, or at the most are conserved for but a short time, in the narrowest canals (as the aqueduct of Sylvius; the central canal of the spinal medulla), holds that the function of the ependyma belongs to the foetal period; and that the vibratile cilia represent the autonomous active element. He does not, by this intend to deny to it some purpose in adult life: if no other, it should be considered as a protective membrane of the nervous elements on which it is placed.

The ependyma may become subject to various alterations: among which thickening, due to nutritive or phlogistic disturbances, is that most frequently met with. Rokitansky was among the first of the pathologists who studied this special subject. In his *treatise on pathological anatomy* he considers enlargements of the ependyma as an exit of chronic hydrocephalus, and he describes five different forms of it, which he compares to those pseudo-membranous neoformations produced on the serous membranes.

The following are the varieties designated by him:

1st. Granulations as fine as sprinkled sand.

2d. Larger granulations which in time become pedunculate nodules.

3rd. Membranous adherent patches, of round form, and of tendinous aspect.

4th. Concatenate patches, with areolæ; forming a network that adheres to the ventricular surface.

5th. Very large pseudo-membrane, which is intimately fused with the ependyma.

We desire to speak of the first sort only; that which is called by some writers *epidendymitis granulosa*. The wall of the ventricle appears thickened and opaque, and sprinkled over with granulations, varying in number and size; at one time shining and crystalline, at another, turbid; again uniformly diffused over all the surface, or in groups at various points. By opportunely throwing light on them, they have exactly the appearance of chagrined skin. Authors, in order to indicate the thing, have recourse to various similes, as, grains of sand, corrugated skin, the tongue of the cat, etc., etc., all which, with more or less truthfulness, give an idea of this necroscopic finding.

The French call these granulations after Bayle or Joire, because these writers studied and described them; but long before them others had mentioned them. Virchow, in a work of 1856, quotes some passages from an old German writer, Brunner, who, as far back as 1694, had very distinctly observed the presence of papillæ, which were visible in a bright light, and as large as pin heads; according to him they concurred with an abundant secretion of hydrocephalic fluid.

The quotations merit textual reproduction:

“Corpora striata depressa erant et interiori cerebri superficiei adæquata. Luci exposita exhibuerunt innumeras papillulas, acicularum capitellorum magnitudine prominentes; attactu nec asperæ nec inæquales, nec nisi radianti luci obversæ, conspiciabuntur. In parte postica dextri ventriculi hinc inde papillulæ capitelloreum acicularum magnitudine instar-pororum cutis frigore perstrictorum, prominulæ conspiciebantur.”

But Brunner touched this subject merely incidentally. Bayle entered on the scientific treatment of it, in his *treatise on diseases of the brain*, published in 1826; and after him Rokitansky in 1844; then Virchow in 1846. Observations subsequently became numerous up to the time of Joire, who, in 1861, made a most important study of the subject, in which he regarded the granulations in their relation to general paralysis.

In course of time, anatomy, having become enriched with valuable and powerful means of investigation, subjected this phlogistic product to histological examination; but the results arrived at are not in perfect accord. Virchow had already shown that the granulations are composed of the same connective substance as the ependyma. Magnan and Mierzejewsky demonstrated that they have a fibrillar organization: that is, they are small fibromi, which send prolongations of the connective tissue into the contiguous parts of the nervous substance; on these the epithelium is proliferated, and forms numerous irregular masses of cells. According to Birch-Hirschfeld the granulations are invested with epithelium, and in their interior they have a fibrillar loose structure, which is rich in nuclei: in the layers beneath the ependyma there is hyperæmia; and around the vessels there is a formation of lymphoid cells, and a large number of connective cells. Finally, Rippling has found that they are composed of connective fibres, which are disposed in concentric circular layers; the epithelium has disappeared from these.

As regards the seat of these granulations Bayle had observed that they are usually most numerous in the fourth ventricle, and that in the lateral ventricles they are most prevalent in the thalami optici and the corpora striata, and much rarer on the vault of these cavities. Rokitansky often saw them on the surfaces of all the ventricles, but principally in the anterior cornua of the lateral. Joire found them constantly in the fourth ventricle, but not always in the others. Magnan and Mierzejewsky observed them usually most numerous on the posterior

half of the floor of the fourth ventricle. Voisin found that their preferential seat is along the sulcus which separates the thalami from the corpora striata, and in the vicinity of the foramen of Monro. Ripping, on the other hand, saw them in almost all the cerebral cavities. Schopfhagen says the foramen of Monro and the calamus scriptosus are their preferential locations. Finally, Brunet states that they are more frequent on the corpus striatum than on the thalamus opticus; that the tenia semicircularis is one of the parts where they are seen to be most numerous, and that those in the fourth ventricle are larger and more confluent on the sides of the antero-inferior walls than on the other regions.

According to the observances of Bayle this cadaveric finding is met with in almost all cases of chronic meningitis. Joire, who excludes the cerebral cortex from nearly all pathological importance in general paralysis, had fixed the genesis of this disease in the ventricular walls; in his opinion the granulations of the ependyma have an absolutely pathognomonic character; and they constitute the chief fact in general paralysis, and by them almost all the most important phenomena are explained. He also, with subtlety, has written that he found this lesion constant in progressive paralysis, and not so frequent in paralytic dementia; and he stated that having been always observed in the fourth ventricle, the reason for the lesions of motility was furnished, which, according to him, is not explicable by lesions of the cortex only. Gallopain almost concurs in this opinion. Luis, without absolutely accepting the opinion of Joire, writes that in the autopsies made by him, he met with granulations very exceptionally outside the range of progressive paralysis.

But researches since made having shown that the idea of Joire is too absolute, the opposite extreme has been run to,—that is, no importance whatever is ascribable to this necroscopic finding.

The majority of pathologists, however, hold that the granulations are a special character of progressive paralysis

(general paresis), but that they may exist in other maladies also. Ripping noted them in cases of chronic dementia, especially in those following mania; and next chiefly in paralysis of long duration. Brunet, besides seeing them in progressive paralysis, met with them in all forms of mental alienation, but they were usually absent in general paralysis of rapid course; they were most marked in hydrocephalus, chronic mania of long duration, and epileptic dementia.

One point, on which nearly all are agreed, is that they represent an anatomical character of the last stages of paralysis of long duration. On the pathognomonic significance of these granulations there is little difference of opinion; they depend on a phlogistic process of the ependyma. Virchow regards it as the result of a thickening of the ventricular walls, which is due to fibrinous exudations of the connective tissue; a prolonged hyperæmic state and a chronic inflammatory process, are the conditions favorable to their development. Rokitansky, considering them an issue of hydrocephalus, regards them as proceeding from an enlargement of the ependyma, due in part to a true thickening of its own texture, and in part to fibrinoplastic deposits. According to Meyer they should be a simple hypertrophy of the epithelium of the arachnoid, and according to Schule, a state consecutive to atrophy of the corona radiata. Brunet puts them into relation with the thickening and the opacity of the meninges, with cerebral atrophy, and with hypersecretion of the subarachnoid and intraventricular secretion. Schopfhagen, regarding them as a product of a chronic inflammatory process, which takes place in the connective tissue, and renders it hyperplastic, describes the pathogenic mechanism in the following manner: "The connective cells, after the phlogistic stimulus, augment the proper nutritive activity, they become enlarged, and send out new prolongations, which constitute the chief element of the connective netting, and of the granulations." He is unable to determine absolutely whether the connective cells increase also in number; in this respect he is not in accord

with Weiss, according to whom the granulations are the result of augmentation of volume and subdivision of the pre-existing connective cells.

Having thus stated the opinions and doctrines of various authors, we shall succinctly relate what we have recorded of the autopsies made in the asylum of Imola.

Of 650 bodies of deceased patients examined, 62 were paralytics; 41 were of males and 21 of females. (N. B. This is a pretty rich exposition. When will American alienists throw off their unblushing indolence and set to work as true lovers of medical science should do?)

We found, with great frequency, œdema and dilatation of the ventricles, in cases of senile phrenosis and of dementia of long duration. In 7 or 8 cases we saw an abnormal dilatation of the ventricle of the septum lucidum; and in a man, who died in the epileptic state, we saw many hemorrhagic points, which shone through the ependyma. In some cases we observed a distinct hyperemia of the ependymial vessels; in others thickening and simple opacity of the ventricular walls. In 6 cases we found more or less extensive adhesions of the superior to the inferior wall of the lateral ventricles, in the form of bridges (ependymitis chronica adhesiva).

But the true and proper granulations which give to the ventricular walls that characteristic appearance which the French designate *chagrinée*, we observed clearly in only 32 cases; 21 of men and 11 of women. They have not therefore been presented to us with that frequency which many others have asserted; and we cannot agree with Brunet, who says that he has observed them in nearly *all* the forms of mental alienation.—We have examined, *post-mortem*, the bodies of about 100 individuals who were the subjects of phrenoses of long standing, and in only a few instances did we see granulations on the ependyma.

The physical characters with which we met, in almost all the cases, were those of the most common forms of

minute granules like sprinkled sand. Only in one instance did we meet with, exactly reproduced, that special form which Rokitansky has described in his third variety, which we have before cited. The case was that of a paralytic who died at the age of 40, from epileptiform attacks. He had been intemperate, but as was stated, free from syphilis. His disease had dated from 8 months before his admission into the asylum; he soon passed into profound mental enfeeblement. Having been struck with epileptiform attacks, he passed into a state of coma, and he died. At the autopsy we found numerous granulations on the ependyma, together with considerable œdema of the brain, opacity of the meninges and atrophy of the frontal convolutions. Further, on the upper walls of the two lateral ventricles, and in corresponding positions, in the vicinity of the outer margin of the caudate nucleus, there appeared a prominence, which was formed of a grayish hard tissue, of cartilaginous aspect, with a rough surface.

As to their seat, we have found the granulations twice in the fourth ventricle only; in all the other cases they were seen clearly in all the ventricles; but in the greater number of our dissections we found them more confluent and more raised in the fourth ventricle than elsewhere. This does not at all confirm the precise assertion of Joire; he made the motor disturbances of paralytics dependent on bulbar ependymitis, because in no other way was he able to explain them; at the present time, when experiment and clinical observance have shown that these disturbances may be referred to lesions of the cortical motor centres, his doctrine cannot be accepted, at least absolutely. Brunet has, with good reason, remarked that the importance of granulations in the fourth ventricle has been exaggerated by some writers.

In the lateral ventricles we often found the entire surface of the ependyma affected; but we observed the greatest confluence of the granules in the sulcus that separates the thalamus opticus from the corpus striatum,

which is in conformity with the views of Voisin and Brunet.

The forms of mental alienation in which we met with the granulous alterations were:

Alcoholic phrenosis: 1 man;

Consecutive dementia: 1 man, 3 women.

Paralytic phrenosis: 19 men, 8 women; from which it appears that this alteration is not an exclusive character of general paralysis, though it is far more frequent in this form than in the others; and our Livi could very justly oppose to Joire the contrary fact, from his own observances.

Certainly then, granulations should not be considered as a pathognomonic fact of paralytic insanity, as Joire has asserted, when writing that he had seen them *constantly* in dissections of paralytics.

In 62 cases we observed them only 27 times. In the other paralytics we, several times, saw œdema of the ventricles; three or four times we saw opacity and thickening of the ependyma; and in three cases, as we have before said, adherence between the walls of the lateral cavities, but never any other appreciable alteration of the ventricular surface.

We were desirous of discovering whether any relation might exist between the alteration now treated of and the cause of the psychopathy, which had presented, but we were disappointed in our researches. We found in 10 individuals well marked syphilis, and in 12 alcoholic abuse; but in other paralytics, presenting no trace of granulations, these causes had also acted. Neither as regards ages were we able to deduce any conclusion; the majority died between their fortieth and sixtieth years; but it is well known that in this period the largest contingent of mortality is furnished; we had few cases between 20 and 40, and very few over 60.

We have before stated that almost all those who have engaged in this study, whether *ex-professo* or incidentally, have asserted that granulations are a characteristic of

psychoses of long duration. Each author cites some other, just as if the thing was an incontestable fact. Brunet writes: "Granulations are observed in all the forms of chronic mental alienation, whilst they are usually absent in general paralysis of rapid course."

In our necroscopies we had about 100 cases of consecutive dementia; some of these were of paralytics, in whom the mental disease had lasted a long time, and yet they did not present granulous ependymitis. On the contrary, the facts observed by us were not consistent with the opinion generally held. In 5 cases we were unable to learn the duration of the disease, from their defective history. In 9 cases the psychosis had run over three years. In all the others, from their clearly established outset up to death, it had lasted less than three years. The following are the figures derived from our notes:

One case of paralysis of 19 months' duration; one of 18 months; two of 17 and two of 14. Four cases of about 12 months; one of 9; one of 8; one of 7. Two lasted less than 7 months, and one less than 6; finally, two cases very rapid, one of them 5, and the other only 4 months.

It appears to us useless to detail even briefly our various observances; let so much as we have written suffice to warrant us in holding that granulous ependymitis cannot be in any way regarded as an essential character of psychoses of long duration.

From our necroscopies we have derived an important fact that deserves to be studied and confirmed by new and more numerous observations; it is, that granulous ependymitis is almost always accompanied by opacities and thickenings of the cerebral membranes, and by sub-arachnoid and ventricular œdema.—This pathological coincidence was noticed by Brunet, but it does not appear to us that others have set it forth in the light which it merits.

For the present we limit ourselves to the statement, that

in 25 cases we had marked opacity and thickening of the meninges, together with a collection, more or less abundant, of serum in the lymphatic spaces; in one man the opacity of the meninges was so extraordinary that the whole anterior region was milky; and the granulations, both in the lateral ventricles and the fourth ventricle, were more numerous and confluent than we have ever seen.

If we may be permitted, from the few adduced facts, to draw some conclusions, we would say that:

1st. The granulations of the ependyma are observed with frequency in progressive paralysis; but they are not restricted to it, for they may be found in other forms of psychosis; and they are not pathognomonic of it, for they are not found in *all* cases of it.

2nd. They are presented, both in cases of chronic paralysis, and in forms of short duration, and even in those of very rapid course.

3rd. Their most common appearance is that which gives to the ependyma a chagrined aspect.

4th. They are seen, with almost equal frequency, in all the ventricles; but always more confluent and elevated in the fourth.

5th. They are associated with phlogosis of the meninges, and with encephalic circulatory disturbances.

SELECTIONS.

NEUROPHYSIOLOGY.

INNERVATION OF HEPATIC VESSELS.—At a recent meeting of the Imperial Royal Society of Physicians, of Vienna, Dr. Paoli made a communication on the innervation of the hepatic vessels. Claude Bernard was the first to formulate the hypothesis of hepatic nerves, though their existence had not been directly proved. Dr. Paoli had tried to decide this problem in the following manner: He ligatured, below the anastomosis of the hepatic veins with the portal vein, all those blood-vessels which conveyed blood to the liver, such as the thoracic part of the aorta and the ascending vena cava. On irritating the peripheral part of the splanchnic nerve, considerable increase of the blood-pressure was produced; the same was also observed when the ascending cava was ligatured above the implantation of the hepatic veins, but in this case to a lesser degree. Experiments which he had made with the view of determining the rapidity of the outflowing blood showed that the liver pressed out blood on irritating the splanchnic nerve, thus proving the presence of vaso-constrictors in the liver.—*Brit. Med. Jour.*

CLINICAL NEUROLOGY.

OPTIC ATROPHY IN TABES DORSALIS.—M. Galezowski has collated 1,029 cases of atrophy of the optic nerve, of which 870 occurred in males and 159 in females. Of this number 717 were cases of locomotor ataxy, in which a syphilitic antecedent was noted 496 times. It is concluded that cases of tabetic optic atrophy comprise about two-thirds of all cases of optic nerve atrophy; that two-thirds of the cases of tabetic atrophy of the nerve are remotely related to syphilis; and finally, that, though generally incurable, optic nerve atrophy in tabes dorsalis may be arrested when it is accompanied by certain peculiar vascular alterations.—*Lancet.*

PAPILLARY ATROPHY OF EPILEPSY.—M. Pichou (*Annal. Md., Psychol.*, March, 1886), finds atrophy of the optic papilla after the disturbances in the retinal circulation in epileptic attack, which he considers as one of the characteristic lesions of the disease. He found it in about nine per cent. of one hundred and fifty cases examined.

ECZEMA AS A NERVOUS DISEASE.—Eczema is often seen in the course of central nervous trouble, especially of a highly emotional type with implication of the vasomotor system. Eczema is generally a vasomotor emotional neurosis, and where dermatological treatment is without avail, that directed toward the nervous system is often curative. Mr. E. Nelson says: "Constitutionally disturbed nervous function, however induced, by producing disturbances of the circulation and nutrition of the skin, is among the commonest causes of eczema. That eczema is powerfully under the influence of the nervous system is shown by the sudden and sometimes periodical exacerbations of the symptoms and their subsidence under the influence of agents which soothe and tranquilize the nerves." The prognosis is dependent upon the degree of nervous irritation and exhaustion. As regards treatment, the chief reliance has been galvanization of the sympathetic system from the head down and general application of static electricity—C. H. Hughes, in *New England Medical Monthly*, May 15, 1888.

CHANGES OF THE HAIR BULBS IN IRRITABLE SCALP.—In 1886 a Berlin physician, Dr. J. Pohl-Pincus, published a paper on "Polarized Light as a Means of Recognizing Irritable Condition of the Nerves of the Scalp," and announced as the result of twenty-five years' investigation of the hair roots by polarized light, he observed peculiar changes in patients suffering from physical irritation or mental excitement. In healthy conditions of the body and mind the hairs that fell out daily examined microscopically by polarized light, the enlarged bulbous end of the root showed white contour and a yellowish or brownish red center. In irritable conditions of moderate grade, all painful conditions of any organ, also in emotional disturbances of moderate grade without any apparent bodily disease, the bulbous end of the hair root is increased in length and breadth, the central part appears under polarized light of a violet, blue or bluish green color,

separated from the white contour by bands of yellow and red. In higher grades of bodily disease or mental disturbance, the bulb becomes still larger, and the bluish center changes to green, yellow or orange. From this he concluded that emotional disturbances or bodily disease influence circulation to such an extent as to give rise to changes in the nutrition and pigmentation of the hair.

THE UNDER SURFACE OF THE TONGUE IN THE DIAGNOSIS OF CEREBRAL VASCULAR DISEASE.—In a communication to the French Association for the advancement of Science (*L'Union Médicale*, May 26, 1888), Dr. Gillot speaks of the neglect of the under surface of the tongue, which, he asserts, often presents certain diagnostic indications in the condition of the superficial ranine vessels. In the young and healthy the veins are prominent beneath the mucous membrane, but in the aged or diseased these veins are dilated, tortuous or varicose, and the venules and capillaries become visible. Minute dilatations, like grains of sand, may be seen on the smaller vessels, sometimes so minute as to be detected only with the aid of a lens, but ordinarily visible to the naked eye, as little projections the size of millet seeds, situated ordinarily a short distance from the tip of the tongue, on either side of the median line, or near its root, and of bright red, purple or almost black color. These are true miliary aneurisms, caused by a thinning of the walls of the vessels, and Dr. Gillot likens them to the miliary cerebral aneurisms. He considers them diagnostic of the probable co-existence of this condition in the vessels of the brain.

DERMATOSES FOLLOWING MENTAL SHOCK.—A lady after witnessing a violent assault upon her husband, was much prostrated by the fright, and three weeks later a bullous eruption, having the characteristics of foliaceous pemphigus, and accompanied by incessant pruritus, made its appearance. Another case was a little girl, who was rescued from burning, and remained for some time in a condition of prostration from fright. A month afterward a pemphigoid eruption made its appearance on the body, disappeared under treatment, but reappeared again several times. A third case was that of a woman who became very much excited in a quarrel with her husband. A few days afterward an exudative erythema made its appearance on the arms, hands and feet, and vesicles on the

lips. E. de Smet has recorded cases of purpura hemorrhagica from the same cause.—*Progrès Médicale*, May 12, 1888.

FORENSIC PSYCHIATRY.

AN OPHTHALMOLOGICAL TEST FOR FEIGNED BLINDNESS IN ONE EYE.—A German factory hand claimed damages for accidental total blindness of left eye. Experts proved the eye sound by the following test:

The plaintiff was asked to read, through glasses, the left being clear white, the right red, some words written in green on a black ground. The man read the writing readily, which he could not have done with any but the eye he claimed was defective, since the red glass adjusted to the right eye would make the green letters appear black, and of course invisible on a black ground.

EDITORIAL.

[All unsigned Editorials and Reviews are written by the Editor]

Lend a Hand.--With the next issue, the ALIENIST AND NEUROLOGIST will have entered the final year of the first decade in its career. We have marched on close together, kind readers and good contributors. The journey has been a pleasant, profitable and successful one to us in many ways. We hope it has been the same to you. Your company has been agreeable to us. We hope it has been so to you, and that we shall not part company during another year. We hope, on the contrary, to not only better enjoy your friendly society as contributors and subscribers, but to make ourselves more welcome and useful to you in the year to come.

We hope also to enlarge our acquaintance with the neurologically inclined in the profession, through the zealous aid of the friends we have already made. We hope you will take an active interest in extending our subscription list, so that the next year may see our subscription list doubled, at least.

The subscribers to the ALIENIST have mostly all paid up. They have been prompt with their remittances, but they could do more for us than they have done in extending our circulation. Many of such friends have sent us encouraging letters with their subscriptions, like the following. Now, if each will send us a new subscriber as well as their own individual encouragement, the coming year will be one of unprecedented prosperity for the ALIENIST AND NEUROLOGIST.

The following letter is a good sample for you, not only to accompany your own subscription, but to come with one or two new subscribers among your medical friends who ought to have the ALIENIST AND NEUROLOGIST on their lists of medical periodicals for 1889.

MESSRS. EDITORS AND PROPRIETORS,
SIRS— Alienist and Neurologist.

Inclosed please find my check for five (5) dollars with bill rendered, which I pay with grateful thanks, for, indeed, your journal is a professional treat far over-reaching the money consideration for what it brings to me.

Yours truly,

* * * *

Interest Shown by the Medical Press in the Work of Insane Asylum Superintendents.—

It gives us pleasure to note the awakening interest in superintendents and their work by the medical press, of which the following is a gratifying evidence:

Dr. Mays, the superintendent of the Stockton Asylum [California], is a man who seems to be especially fitted for his position. He is Professor of Mental Diseases in the University of California. The Doctor put me in charge of Mr. Stockwell, the supervisor, who kindly showed me carefully the entire make-up and management of the institution.

The grounds occupy 107½ acres, the male and female departments being separate affairs, at least one-fourth of a mile apart. The condition of the wards, the protection against fire, the system of prompt communication with the central office, are all that one could desire.

Dr. Mays has been doing good work in scattering the modern distrust of insane asylums. He delivered an address at the graduating exercises of the Medical Department of the University of California, November 15, 1887, in which he made this subject his text. He asks how we shall account for the suspicious feeling that seems to pervade the public mind with regard to insane asylums—how account for the ready credence given to stories of cruelty and outrage, stories either coined from the distorted brain of some half-cured patient, or else the malicious invention of some discharged employe? Why do people who in other affairs of life exercise a wise reservation of judgment join at once in the chorus of detraction? There is evidently a deep-rooted distrust on the part of the public generally. The answer to these questions is that it is a residue of a once prevalent habit of thought, of a feeling that once had good reason to exist. The traditions of centuries are not overthrown in a day.

He further says: "For a thousand years the very conception of insanity was enough to strike terror to the stoutest heart; for hundreds of years a lunatic asylum was the most loathsome and dreadful of prisons—the abode of suffering and misery. These horrors were stamped, generation after generation, upon the minds of the people at large, until the memory of them has been handed down like an instinct, and this is the heritage that the modern asylum has to contend against."—*Special Correspondence Medical and Surgical Reporter.*

The Locus Morbi of Polyuria.—Not long before the lamented Jewell died he was engaged in an endeavor to settle the question as to the locus morbi of polyuria, which although apparently settled by the experiment of Claude Bernard, now seems not to have been conclusively demonstrated, or at least not to the satisfaction of Kahler, whose experimental study of polyuria as a sequence of local cerebral lesion has led him to conclude that the results obtained by both Bernard and Eckhardt were only shown in temporary polyuria, while he (Kahler) has produced permanent polyuria by causing a lesion in the

posterior cranial fossa. Kahler concludes (*Centralblatt für der Nervenheilkunde*) that neither lesions of the *vermis cerebelli* nor of the median region of the open part of the medulla and that of the corpus trapezoides caused polyuria. But every time the *lateral* portion of this region was involved he found permanent polyuria to follow. The conditions of this experimentally-produced permanent polyuria indicate that it is due to a lasting irritation of certain nerve tracts that have to do with urinary secretion; so that it, like the transient polyuria, is to be considered as an irritative phenomenon. Claude Bernard's reference of this phenomenon to the floor of the fourth ventricle is not materially affected, except that we need not henceforth regard the floor of the fourth ventricle as the only diabetic center in the cerebrum. Kahler's results only confirm what physiological experiment has so often proved, viz., that many functions have more than one exclusive center, a fact that renders vicarious function an often observed possibility under stress of morbid implication of the original and ordinary source of special function.

The Unfortunate Morristown (N. J.) Insane Hospital.—Since Dr. H. A. Buttolph justly resented the injudicious interference of the management of this institution with the physician's prerogative and resigned, this grand old institution has not prospered.

Dr. Edward C. Booth, until lately the physician and (nominal) superintendent in charge, has imitated Dr. Buttolph, and sent in to the management his resignation also, for good and sufficient reasons.

It would be wise and well for the welfare of the unfortunate insane of New Jersey, if those in authority of that institution would, after this adverse experience, learn the lesson wisdom and all experience teaches, and return to first principles and their first love, put Dr. Buttolph again, or replace with apology Dr. Booth, in charge, and run that institution in the only way it can be well and satisfactorily managed, viz., as it was before Dr. Buttolph left it, and in accordance with the time-tested and verified propositions of the Association of Superintendents of American Hospitals for the Insane. Put a captain that understands navigation at the helm, and give him a correct chart and don't bother him, and the bright philanthropic child of old Trenton will yet be a glory to New Jersey. She will ride the storm safely, and the threat-

ened shipwreck of the many minds on board that should be saved will be avoided.

Kleptomania for Shoes, and its Sequel.—

The daily press lately chronicled the unfortunate history of an old soldier who, after faithful and honorable service in the late war, as the result of injury and exposure, became kleptomaniacal in the direction indicated in the caption. He would steal and put away ladies' shoes until he had accumulated, it is said, over fifty pairs, though he put them to no use whatever. This fact of the purposeless stealing, and the man's change of character from his former natural self, excited no suspicion of insanity, and he was sent to prison and there served out the term of his sentence. He recently suddenly died since his release, of an apoplectic attack, and his former comrades, who deserted him when a convict, buried him with the honors due an old soldier with a record of honorable service, tardily acknowledging that a disease-damaged brain, and not a perverted heart, caused his unnatural conduct. *Post-mortem* justice is all the insane often get in this world, and especially the kleptomaniacally-inclined. But purposeless, motiveless stealing of comparative trifles by persons with a previous life-record for honesty, should excite suspicion of disease, and in such instances the true psychological expert would suspect and search for such an explanation of such unnatural conduct, displaying change of character without adequate moral cause.

The Late Dr. C. R. Agnew.—

Dr. Agnew was a man of uncommon ability, and of urbane and accomplished manner, and his life was largely devoted to the performance of good works. He was identified with many of our public charities, either on the Consulting Staff or as one of the Board of Directors or Governors. He was large-minded, and of a varied and rare executive ability, which he exercised freely on all occasions for the public weal.

This memorial language of his colleagues of the New York Foundling Asylum we cordially endorse, but their proposition in the resolutions of condolence that death comes especially to call those whose lives are most useful to their fellows, *because* they are most useful, is as incomprehensible as the common sentiment that "death loves a shining mark," etc.

Dr. Agnew was an exemplary and a great physician. The young who may emulate his example will not have lived in vain.

The Montreal Medical Journal.—The name of *The Canada Medical and Surgical Journal* has been CHANGED to *The Montreal Medical Journal*. It has been enlarged in size, from 64 to 80 pages, at the same time reducing the subscription to \$2.00 per annum, and making other improvements that we feel will place it in the front rank of medical publications.

The Sanitary Conditions of School Life.—A Word to Teachers Who Read the "Alienist and Neurologist."—The sanitary conditions and necessities of school-houses and school life mean the conditions and essentials of health of the scholar. The scholar makes the school and the trained organism makes the scholar. If he be well endowed and well sustained in all sanitary essentials the school will be a glory and a triumph, a monument to the enlightenment of the age and a memorial of true educational progress. *Non progredi est regredi*, and not to advance the scholar in physical power to receive and sustain the weight of education, is to damage rather than to benefit him, and to entail the danger of damage by hereditary deterioration of those who may become his descendants. The true work of education is to build the brain and whole allied nervous system and associate (subservient and master) organs of the body. To build and furnish with architectural adornment and interior embellishment and power a human brain is the noblest work of man. To educate is to educe, *draw out*, power of mind by exercise of brain, but it is something more. True education should impart capacity by healthful and not injudicious exercise, which is one of the essential conditions of growth.

Exercise is waste, and waste is one of the essential physiological conditions of repair. When the wasting or disintegrating is going on in the healthy organism the reparative processes are correspondingly and preponderatingly active, so that when the excitants of retrograde change or waste are supplied by impressive and stimulating methods of teaching, the conditions of adequate repair in an abundance of rest and organic nutrition and blood purification, should be lavishly supplied the organism upon which are laid the demands of a thorough modern education.

Meus sana in corpora sano is the old maxim, and a strong and healthy body for a strong and healthy mind should

be the maxim of our day. Any process of education which draws on the mental and correlative physical powers without supplying correlative and compensating physical power is vital robbery, vicious and damaging to the individual and race, imperiling the future capacity of civilized communities subjected to such a process, for the final reception of education at all, endangering that ultimate lapse into mental inactivity and degeneracy which is the penalty of vicious overtax of organism, either through immoral, vicious or unwise mental and emotional overstrain and through which, for conservation and reparation of lost power, prodigal individuals, like unwise people, must pass the dark ages of necessary inactivity which must come and precede the new awakening, if we draw out without supplying power in our methods and processes of education. As well might the sun demand good fruit by shining day and night on trees starved of proper nutrition at the roots as for educators to expect fruition from school training and teaching independently of the other conditions which are necessary to healthy power and effort.

To supply power we must know the human organism well and its needs; to manage the machine we must understand its power and the conditions of its movements. If these are understood, the conditions and necessities of school-houses and the life within them to be fostered, will be readily comprehended.

The life of the school-room is its air and light. It cannot have too much of either, if fresh and pure and dry, because the life of the organism is the blood and pure air and free sunlight are essential conditions of healthy blood.

There is no danger of too much air in a school-room, but while no precautions need be taken as to *quantity*, except that it be not stinted in this regard, *quality* and *temperature* of school-room air should be as much a study of the teacher as the text-book or task for the student. Unequal and concentrated currents of air in violent motion are likewise to be considered, while gentle temperate currents or breezes that do not strike so as to chill feet or neck and congest the head or other organs are salutary.

The normal temperature of the blood is $98\frac{1}{2}^{\circ}$. The physical system at rest will perform its physiological functions in a temperature of from 68 to 70° F., while in

voluntary physical action, as in walking, playing or working a much lower temperature is tolerated without harm to the internal organs.

The sanitary conditions and necessities of school-houses and school-life consist in keeping the physiological machinery of the scholar in good working order, and to do this not only the air and temperature of the school should be looked after, but the habits and temper of the scholar. Timely rest, judicious exercise, agreeable recreation, prolonged sleep, fresh air, sunlight and food in good quality and abundance, make the machine grow in strength with its evolution towards maturity. No night study for boys or girls.

We hope to see the day come when our schools and universities can point to their graduates as much finer specimens of manhood and womanhood, physical as well as mental and moral, than those who grow up with but little education—when to educate will mean what its name implies, to draw out and develop, not to exhaust and wither the powers of so many, as now happens to such as are not extraordinarily well endowed through a good ancestral physical lineage. Take right care of the human machine in childhood and youth, train it up physiologically, educators of the land, and the men and women of coming generations will be monuments of your wisdom. Over-tax them by untimely tasks, starve them of fresh air and sun-light or allow them to blast themselves by vices that vitiate the blood and exhaust the nervous system, and the future will be a vast cemetery of tombstones erected over the prematurely dead youth of the land and communities of asylums for the insane, of the feeble-minded and deformed, out of all proportion to normal population, made so by a vicious system of brain strain that imparts no enduring or developing power, and miscalled education.

Reverse Cerebral Automatism of Alcoholism.

—Students of the phenomena of alcoholic toxhæmia and its sequent neuræmia are familiar enough with the normal automatism of the brain while under the influence of poisonous doses of alcohol, by which the mind is enabled to perform, even under an enormous load of alcoholic poison, certain habitual functions, such as the routine mental operations connected with daily occupation. This fact is so common as to attract but little attention,

and so common that it deceives many a drinking man into a feeling of false security in regard to himself. The normal habit automatism of the brain is the last thing to be interfered with by the toxic power of alcohol.

The doctor can prescribe well-known formulæ, the lawyer plead familiar cases, the merchant discuss well-known wares and the mechanic can handle the tools of his trade, after the capacity for original conception or new and uncommon movement is seriously interfered with by this cerebro-spinal poison.

But there is a condition of the mind of grave significance, and possessed of features of medico-legal interest, which Magnan, Mason, Crothers, Wright and all medical writers on inebriety call by the above name, which should be universally studied by physicians and jurists, and which should receive distinctive designation. We choose to term it *reverse automatism* because in it the mental character is changed—the normal mental character is not automatically displayed, but a character not natural to the individual is brought into view. The man is not his natural self, but a very unnatural person. He is insane. In *vino veritas* does not apply here. There is no truthful portraiture, as in ordinary intoxication, of the man's natural character. The reverse mental automatism is often as unnatural as the morbid cerebration of epilepsy, which often supplements, supplants, precedes or follows an epileptic seizure.

Crothers and Wright have done some specially good work in bringing out in unmistakable clinical and pathological colors this morbid reversion of character under the influence of alcohol, and we suggest that they take pains to name it so that it may not be mistaken. *It is reverse cerebral automatism and it is insanity.*

In searching for it we should be sure, however, that the automatism is not in accordance with the individual's natural character or previously expressed purpose in his sober and sane state; and in testifying in courts be certain that we do not shield premeditated crime. The drunken man who does what he intended to do or what he is naturally capable of doing, even though blindly drunk, is not acting under the influence of reverse automatism, and is not entitled to that extenuation of disease, which should, before the law, shield the reverse *avolistic* conduct of alcoholic toxhæmia.

CORRESPONDENCE.

HOTEL WINDSOR,
VICTORIA ST., WESTMINSTER, LONDON,
August 10th, 1888.

My Dear Dr. Hughes:

I beg to acknowledge with many thanks your courteous letter, with the enclosed Review on "Lunacy in Many Lands," from the ALIENIST Journal for July. The reviewer states: "The author must have been misinformed in the statement he makes that the great criminal asylums of England and America use no mechanical restraints whatever." If this be so, then the superintendents are responsible for the misstatements; but I cannot consent to believe that gentlemen would willingly have furnished me with misleading and wrong statements, more particularly, as most of the information was supplied to me in writing, in answer to the questions at page 32 of the book. The replies to these, signed by the superintendents, in most cases, I still hold as vouchers for the correctness of the statements published in tabulated form.

See page 871—State Asylum for Insane Criminals, at Auburn, New York—"No form of mechanical restraints has been in use since March, 1882"—a statement by the superintendent.

Page 807—Broadmoor, England—"No restraint used." By written return from the superintendent.

Page 1242—Dundrum Criminal Asylum, Ireland—"Camisoles are used, but only in exceptional cases." By written return from the superintendent.

Page 1481—Perth Lunatic Department, Scotland—"No mechanical restraints."

The author's "conclusions may not accord with the opinions of many superintendents," but this again is not wholly the fault of the author. The conclusions are based on the evidence collected. The information, if read carefully, will confirm the conclusions.

The reviews generally are flattering, and the number of letters received from all parts of the world, from gentlemen interested in the care and treatment of the insane, are most gratifying.

Of course there are many in this country who are not pleased with the work, for various reasons. It is very liable to unsettle their previous ideas, and cause the public, who are most interested, to form conclusions adverse, in many respects, to the superintendents.

The *Journal of Mental Science* for January, 1888, contains a review: "There will no doubt be many who will dissent from the correctness of Mr. Tucker's statements and conclusions, etc. If those who are aware of inaccuracies of statements will make the necessary corrections publicly known, the mischief arising from the errors into which Mr. Tucker has fallen will be prevented. We are open to receive any communications of this nature," etc.

By reference to page 12 of "Lunacy in Many Lands" the reader will at once see why this prayer has been sent forth from the journal above named. Errors may easily strike those individuals whose asylums have been truthfully, although perhaps not as flatteringly reported as wished.

Again, the *Medical Press* for July has a review much after the same style: "Dr. Tucker's book entitled 'Lunacy in Many Lands,' is a notorious one, for amongst asylum men its compilation has been an open secret, and Dr. Tucker had, perforce, to depend almost entirely on them for the material of his compilation. Two things will, at a glance, strike those who know anything of the subject: (1), that Dr. Tucker's compilation must be taken *cum grano*," etc., etc., "it is so often unreliable; (2), it is likely to be read by the lay public; and, (3), it is a work which, rightly conceived and wisely compiled, should have been a treasure in medical libraries," etc.

Now it will be seen at once that if the book is so full of errors these reviewers should have formulated the misstatements for the public good; but no, they prefer to condemn, *in extenso*. Certainly the more the book is quoted the more the public will be able to justify the author. I do not think many superintendents will be found who will deny their own written statements to the author, or state that their Annual Reports to their own Boards of Directors should be taken *cum grano*, for from these two sources the compilation is necessarily largely built up.

I remain, dear sir,

Yours very truly,

C. H. HUGHES, M. D.,

G. A. TUCKER.

500 N. Jefferson Ave., St. Louis,

U. S. America.

P. S.—Please publish this letter if you are so disposed. Many thanks for your kind offer of the use of the pages of your valuable journal.—G. A. T.

I enclose copy of a letter, one of hundreds received from all parts of the world, in commendation of my work :

NAPA STATE ASYLUM FOR THE INSANE,

NAPA, CAL., July 7th, 1888.

DOCTOR GEO. H. TUCKER.

My Dear Sir: Your esteemed favor of the 9th inst. is acknowledged with thanks. Your splendid contribution to the literature of insanity, "Lunacy in Many Lands," came duly to hand, and was acknowledged in a letter addressed to you at Melbourne, Australia. I regret very much that you did not receive it, as I have derived both profit and pleasure from the perusal of your great work. It is complete in all its parts, and you may well feel proud of it as a monument to your sagacity and untiring energy and perseverance. What is more important, it is correct and just, so far at least as it relates to the asylums with which I am familiar. You have even done more than you promised in your "Introduction," and I again thank you, not only for the copy sent me, but for all who desire information on the important subjects of which it so ably treats.

With kind regards to your accomplished lady,

I am, dear Sir,

Yours very truly, etc.,

* * * *

A New Edition of the "United States Dispensatory."—J. B. Lippincott Company announce a new and revised edition of the "United States Dispensatory." The revision has been thorough: more than one-third of the book, or nearly eight hundred pages, is entirely new matter, while the whole work has been most carefully rewritten. The National Formulary has been incorporated.

Dr. McBride and Wauwatosa—During our summer vacation we found a restful, home-like, quiet and picturesque place at Dr. J. H. McBride's Sanitarium at Wauwatosa, near Milwaukee, Wisconsin. This institution is fulfilling its promises to the profession and public, both in its appointments and grounds, and in the skill of its accomplished superintendent.

Dr. Hammond's New Sanitarium, at Washington.—We acknowledge the receipt of a picture of the artistically beautiful and commodious building. The advertisement and further notice will appear in the January number.

IN MEMORIAM.

DR. A. Y. P. GARNETT.—

Dr. A. Y. P. Garnett died on the night of July 11, of heart-failure, at Rehoboth Beach, Delaware. He was born in Virginia in 1820; was graduated from the University of Pennsylvania in 1841, entered the United States Navy as assistant-surgeon the same year, was promoted surgeon in 1848, and resigned in 1850 in order to accept the Professorship of Clinical Medicine in the National Medical College of Washington. At the breaking out of the rebellion, he left Washington and became Surgeon-General of the Confederate Army. When the war was over, he returned to Washington and was again elected a Professor in the National Medical College. He served as President of the American Medical Association at its last meeting. He contributed many valuable papers to medical literature, the last being the Presidential Address before the American Medical Association, in which he spoke very earnestly in favor of elevating the standard of medical education in the United States.

The above record from a contemporary journal is a record of honorable service. Dr. Garnett was a physician whose life was alike an honor to his State, his country and his profession. During the rebellion he followed his political convictions as most physicians did, either side of the unhappy line; but, whether in military or in civil life, he was always the gentleman and the true physician. His heart, like that of the true physician everywhere, was inclined to heal rather than to tear open wounds, physical or political.

We join his nearer friends and immediate kindred with our sympathy for a good man gone.

REVIEWS, BOOK NOTICES, &c.

A PRACTICAL TREATISE ON THE MEDICAL, SURGICAL AND HYGIENIC TREATMENT OF CATARRHAL DISEASES OF THE NOSE, THROAT AND EARS; including the Anatomy, Physiology, Pathology, Etiology and Symptomatology Connected therewith; with one hundred and forty-eight illustrations and thirty-two lithographic plates, showing Anatomical sections of the Nasal and Pharyngo-nasal Cavities, and the cells and sinuses connected with them. By Thos. F. Rumbold, M. D., Fellow of the American Rhinological Association, Member of the St. Louis Medical Society, Permanent Member of the American Medical Association, and of the Medical Association of the State of Missouri etc. Published by the Medical Journal Publishing Company, St Louis, 1888.

We have before us the second edition of this work, rewritten and enlarged, in the preface to which the author informs us that the theory and practice advocated in this work, are the products of arduous labor, constant study, and daily observations, that commenced in 1855.

The author discusses catarrhal disease of the Nose, Throat and Ears as a unit, contending that throat complaints can be more successfully treated in connection with the pharyngo-nasal and nasal inflammation, which always exists, than when treated alone; because the disease of the throat is a disease of the nasal passages extended to the throat; and that diseased ears can be more successfully treated by treating the rhinal inflammation which always exists, since the ear disease is a rhinal inflammation extended to these organs.

The thought that runs through all the author says, in *Part I*, concerning the Anatomy and Physiology of the Nose, Throat and Ears, as well as all he says concerning the Pathology, Etiology and Symptomatology of the diseases that affect them, is (a) that the nose is the organ first and generally chiefly affected; and (b) that throat and ear diseases are always secondary to nasal inflammation.

In the Anatomy of these parts, he shows the numerous nervous and vascular connections between the nasal passages and the adjacent organs, and especially those of the brain, and he also maintains that very many nervous diseases may be traced to rhinal inflammation. A chapter is given on the sympathetic nervous connections between the nasal passages and the throat, ears, brain, heart and lungs. In his opinion this system of nerves proves the unity of catarrhal disease in the Nose, Throat and Ears. The mucous membrane of the regions under consideration, he considers loses its function on the supervention of inflammation and maintains the inconsistency of making irritating applications to the diseased mucous membrane, whose condition is the result of irritation that originated in the integumentary and mucous surfaces of the body.

What the author has said concerning the functions of the soft palate, uvula, and the azygos prominence in the first edition of this work, is again

repeated, and he reiterates his views concerning the functions of the Eustachian tube, middle ear, and mastoid cells as given in the first edition with many additional facts to prove the correctness of the views advanced.

The author suggests the name *Pruritis Rhinitis* for the complaint commonly called *hay-fever*, considering it to be its most prominent, constant and characteristic symptoms, namely, itching and inflammation. He describes the disease as a sequence of common nasal catarrh, a view he held in a paper read before the St. Louis Medical Society in May 1869. He made the same statement during a discussion on Helmholtz's method of treating hay-fever, in the Illinois State Medical Society, at one of its meetings in Jacksonville, Ill., in May, 1874. On page 60 of his first edition of "Hygienic and Sanative Measures for Chronic Nasal Catarrh," is seen the same assertion. This book was given in bound form to the public Sept., 1880; but he gave a few forms in which this statement occurs, to quite a number of the members of the American Laryngological Association in June, 1879.

A few years after the author began to limit his practice to the treatment of the diseases of the Nose, Throat and Ears, he discovered that the successful management of a catarrhal condition of these organs depended largely upon his patients faithfully observing the laws of health. He soon found, also, that even after they had recovered as completely as it was possible for them to do, the continued observance of these laws was required to maintain their health.

For these reasons he commenced in 1862, to give such rules to his patients as observation had taught him were useful in aiding them to take care of themselves during those seasons of the year in which they were most liable to take cold. These rules are given in chapters, in *Part IV.* of the book.

The author takes great pains to show that it is very important for the patient to discontinue those habits and customs which result in irritating the sensory nerves of his integumentary and mucous surfaces by colds, tobacco, stimulants, etc.

In harmony with the author's theory, five things must be done in order to successfully treat catarrhal inflammation of the Nose, Throat and Ears, namely:

- A. Non-irritative agents only should be employed.
- B. The means for making these applications should not produce the least irritation.
- C. The whole of the irritating catarrhal secretion should be removed.
- D. The agent applied should have sufficient solidity to remain for several hours on the inflamed surface, to protect it, as much as possible, from the irritating influence of the air, and it should possess also, such properties as will prevent the future secretion from becoming acrid.
- E. The patient must discontinue irritating his integumentary and mucous surfaces by colds, tobacco, etc.

If all this is faithfully followed, the *vis medicatrix naturæ* will perform the cure.

Chapter eighth, which treats of diseases of the nervous system that are secondary to diseases of the nose, throat and ears, will prove, to many

of the readers of this journal a novel and interesting subject. In this chapter the author proposes to show that a very large percentage of catarrhal patients are affected with nervous or mental troubles, and that these latter complaints have their origin in rhinal disease.

The author's long experience entitles him to a considerate hearing, and the chapter, with its detail of cases, should secure for the book a place in every hospital for the insane and sanitarium for the nervous in this latitude at least.

A practical acquaintance with the author's practical methods and salutary results justifies us in commending them whether we accept his reasoning *in toto* or not, and we do not. One fact in the management of all mental and nervous diseases is universally conceded, viz., that all sources of irritation should be removed or allayed, and Rumbold's methods are non-irritating and soothing and protective to the nasal and pharyngeal passages, and always indicated where peripheral irritation may be found in the condition of these passages.

The illustrations of the book are well executed, numerous and quite plain and complete, the author's pre-eminent mechanical ingenuity in devising instruments exploratory and manipulative, being as conspicuous as his practical familiarity and acknowledged therapeutic skill in the treatment of the important cavities of which the work treats.

The Medical Journal Publishing Company, 820 Olive Street, Saint Louis, is the publisher, and the price is \$8.00 and \$9.00, according to the binding.

ON THE VARIOUS MODES OF PROVIDING FOR THE INSANE AND IDIOTS IN THE UNITED STATES AND GREAT BRITAIN. By D. Hack Tuke, M. D.

Dr. Tuke's very interesting article was read before the International Medical Congress, and considering the uncertain character of statistics relating to the number and distribution of the insane, he has given us as satisfactory information as is possible at the present time.

In the early part of the article he states that in English returns of the number of insane no distinction is made between insane and idiots, whereas in the United States they are reckoned separately.

If this distinction had been properly carried out in the taking of the last United States census the statistics would have been of much greater value. Unfortunately, in the case of insane persons in private families, the census taker usually had to decide the form of mental disorder, and the consequence is that he generally put down cases of chronic dementia as idiocy. The census statistics therefore are valueless so far as they attempt to make a distinction between insane and idiots.

Dr. Tuke is surprised to find that the private insane asylums in the United States contain so small a proportion (five per cent.) of the total insane population, and he calls attention to the fact that there are more insane in the jails of this country than in the private asylums. The number of private asylums has greatly increased since 1880, and it is probable the number will be much increased in the near future. The large majority of the private asylums are as yet in the older and wealthier communities and near large cities.

In relation to cost of private patients in the various State hospitals it would be difficult to speak with any approach to definiteness, the laws regulating charges being different in different States. In the State of New York, for instance, they receive private patients in the State hospitals and charge for their care and treatment any sum that may be agreed upon by the proper authorities. In Wisconsin the law prohibits the authorities of a State hospital from charging more than the actual cost of maintaining a patient. Hence patients may be provided with extra accommodation and pay therefor, but the institution is forbidden to charge more than the simple cost of such extra provision. The theory of the Wisconsin law is that private patients in public institutions lead to unequal care, and the aim was to place all who came to the institution upon an equal footing.

Dr. Tuke considers that the English county asylums correspond to our State hospitals. He finds in these asylums in England there are confined sixty-two per cent. of all their insane. In the State hospitals in the United States he says fifty per cent. of the insane are confined. He says English almshouses contain sixteen per cent. of their insane, and in the United States twenty-five per cent. of the insane are confined in almshouses. The writer quotes Mr. F. H. Wines, of Illinois, as authority for the statement that the number of insane and idiots in the United States in 1880 (which was 42,083) had increased very nearly to 60,000 in 1887. Dr. Tuke concludes from information furnished by Mr. Wines that in 1890 the hospitals of the United States will contain 80,000 insane. He appears to approve of the cottage plan of providing for the insane. He refers to the "boarding out" plan lately introduced in Massachusetts and which has long been in vogue in Scotland, where nineteen per cent. of the insane are thus provided for. Dr. Tuke cautions against certain possible abuses of the system, and we only regret that he does not take the opportunity to condemn a system which is so liable (we might say certain) to be attended by abuse.

In the number of the *Journal of Mental Science* in which Dr. Tuke's article appears is a quotation from a paper by Dr. Hesse on "Gheel and its Insane Colony." We cannot refrain from quoting from Dr. Hesse, and we particularly commend this to the great State of Massachusetts:

"*Gheel*.—Dr. Hesse read a paper upon 'Gheel and its Insane Colony' to the Medico Psychological Association, which met at Hanover, in 1884. We have noticed that of late the shares of Gheel have been falling. Dr. Hesse's description is not calculated to raise the credit of that concern. In some places of the Gheel district he saw huts such as in our country are only to be found in the West Highlands or Ireland, with bedding and furniture of a very poor description. The patients, he writes, spend the whole day with their keepers; they work with them, or sit if they are not able to work, in the smoky room. Order or cleanliness is scarcely seen in any of those houses. Everywhere there is dirt and the most sordid poverty. The keepers have, in general, only a small patch of ground, and give themselves to agriculture as far as the dreary desert is capable of tillage. Few of the inhabitants have a cow, the most of them only a goat. They depend much upon the board which they get from their patients. Butcher's meat is an article of luxury, which, at most, is seen in small quantities on Sunday. Their ordinary fare is potatoes with vegetables, or fried with

dripping. In one of the houses the housewife told Dr. Hesse that nothing had been given to the patients up to mid-day but coffee and rye bread. In the older parts of the Gheel colony he found things somewhat better, especially in the village of Steelen. He praises especially the expertness and quickness of the people in managing lunatics.

"Dr. Hesse thinks the supervision of the insane female patients very faulty, and expresses his belief that the regulations given out for the care and diet of the lunatics are often neglected and evaded. He proposes a number of reforms; but it seems impossible to carry out these effectually without totally altering the character of the poor Flemish peasants, who eke out a small subsistence by economies practiced on their insane boarders."

In relation to the cost of buildings, the writer speaks as follows:

"It may be of interest to state briefly what the cost of these asylums has been, for the economical provision for the insane is a question which is pressed upon us in both countries. Doubtless in England we have traveled along the same road that you have, in exceeding in some instances the bounds of moderation, and indulged in a too lavish expenditure upon the buildings provided for the indigent insane, while one has always a fear lest the economist should interfere with the efficient provision for the insane. Still, I think that in recent years the experiment of the Metropolitan District Asylums has proved that it is possible to build institutions for quiet demented, idiots and imbeciles at a very much smaller cost than that expended upon our magnificent county asylums. I am able to give you the cost of three of these institutions in the neighborhood of London, viz., Caterham, Leavesden and Darenth. In this outlay I include the land, the building, plant, roads, etc., furniture, and in short, all the expenses connected with the construction. Caterham was built for the accommodation of 2,050, and cost £97 per head (\$485); Leavesden, built for 2,000 patients, cost £90 per head (450); Darenth Asylum and the Idiot Schools, containing 900 adults and 500 children, cost £185 per head (\$925), the higher cost being due to the character of the building for the Idiot Training School."

The statistics of Dr. Tuke's article are comprised in fourteen tables which have evidently been prepared with much care. J. H. M.

TUMORI CEREBRALI. By Dr. G. Seppilli, Medical Superintendent of the Asylum for Insane, Imola, Italy.

To the fraternal politeness of the above distinguished writer, we are deeply indebted for a copy of one of the most interesting and truly instructive contributions to cerebral pathology we have ever had the pleasure of perusing. Sanguine as, from past acquaintance with the productions of Dr. Seppilli, were our expectations on taking up the present work, we continuously found our appreciation of its merits augmenting as we advanced in our task—nay, that word is here utterly out of place—a real feast it was, and assuredly the words of Shakspeare, in his "Hamlet," stood vividly before us, for we did "hang on it, as if increase of appetite had grown by what it fed on."

Dr. Seppilli must have been an indefatigable reader of the modern literature of cerebral diseases; the materials for the illustrative portions of his

work have been drawn from no less than 255 different publications—great and small—and of all nationalities, including, of course, the American, for it is as creditable to Italian scientists as it should be reproachful to us, that they are infinitely more familiar with our publications than we are with theirs; and we may extend the same compliment to our John Bull cousins. The collection of cases of brain tumors gleaned by the author from various sources, and reproduced by him, briefly or more at length, according to circumstances, is over 200 in number. It is unnecessary to say that the authors quoted are almost all of world-wide reputation, so that the reader of this little book may become acquainted with the latest and most valuable views of modern cerebral pathologists. In this respect Dr. Seppilli's labors must prove very profitable to those readers—and they by no means constitute a minority—who have not time for a wide range of research, nor perhaps that abundance of ready cash which a plethoric library demands.

But in speaking thus commendatorily of the valuable selections introduced by the author, it is not to be understood that these constitute the most valuable portion of the book; far otherwise indeed. Dr. Seppilli's own thoughts, expressed as they are in clear and simple language, his various judicious criticisms of the opinions of other writers, and the gentlemanly deference with which he occasionally feels constrained to decline assent to the views of some illustrious authorities, persistently bespeak for him the admiration of every zealous student of psychological medicine. It would be a very pleasing indulgence to the writer of these lines to cite from Dr. Seppilli's original observations a number of extracts which would sustain the encomiums here awarded; but in reality the task of selection would be as perplexing to the reviewer, as the result might be unjust to the author. The passages which, during the course of perusal, we had deemed deserving of quotation, became so numerous that we had to relinquish our purpose, for the space at our command does not warrant the length to which this paper would otherwise inevitably extend.

It is very unlikely that this book will obtain republication in either America or England. Jonathan and John Bull, so far as their acquaintance with Italian medical literature is concerned, are denizens of "Sleepy Hollow." How long they may luxuriate in their present suck-paw torpor, is a question of very difficult solution. In the meantime they are shutting themselves in from intellectual exchange with a body of men whose untiring industry, mental brightness and moral courage are now bringing them into the front rank of scientific progress. If the adverse verdict of publishers may be regarded as a reliable reflex of the taste of the American and English book-purchasing community, we certainly have not very much of which to feel proud. But perhaps the grapes hang too high, and Reynard cannot help thinking they must be sour.

J. W.

PSYCHIATRIE UND NERVENKRANKHEITEN.—Bücher-Verzeichniss von Franz Deuticke wien 1. Schottengasse Nr. 6.

This pamphlet gives a very complete list of the best books on diseases of the mind and nervous system. Readers of the ALIENIST AND NEUROLOGIST, who are now in Europe, may find it pleasant and profitable to call

on Franz Denticke, in Vienna, and make their purchases of foreign neurological literature from him.

ALIMENTAZIONE FORZATA DEI FOLLI SITOFABI—This is a little book of 135 beautifully-printed pages, with two plates at the end representing the apparatus contrived by the author, Prof. Vincenzo Leonardo Cera, of Naples, for the administration of food to patients laboring under the very harrassing form of insanity known as sitophobia. We can hardly believe that forced alimentation of the insane in Italy has been so long unpracticed there, as the tenor of this book would seem to indicate. Certainly in America the practice has been long known and widely prevalent, and every asylum superintendent can amply corroborate all that has been advanced by Dr Cera of its great value. It is very much to be wished that the apparatus recommended by the author was more simple and less costly. It presents no advantage whatever over the modest and very cheap contrivance of Dr. Yellowlees, described by him in a letter to the editors of the *Lancet* (London), under date 12th May, 1888, and reproduced in the *Journal of Mental Science* for July; also in the *Canada Lancet* (with plate) for August. This apparatus is so simple that almost any handy person may make it for himself, and it is so easily used that even the least instructed nurse may be entrusted with its employment.

THE PACIFIC RECORD OF MEDICINE AND SURGERY is one of the best medical journals on our exchange list. We have never consulted its pages without finding therein something of interest and profit to the oldest as well as to the youngest practitioner of medicine. At the close of the second volume, the accomplished and industrious editor, Dr. Chas. W. Moon, congratulates himself upon his journal having become the representative medical journal of California, and we cordially join him in hearty felicitations. The City of the Golden Gate ought to be proud of the *Pacific Record* and its two years of progress. There is no reason under the sun why the sun of science in the Occident should not shine as brightly as it does in the Orient. The land of perennial fruits and flowers and verdure is destined soon to be as rich in intellectual power and scientific achievement as it has been and is in precious metal, and it even now is richer far than many in the far East believe, in all that exalts science and the culture of mankind. We have more than once been there and know whereof we speak. Our own eyes have beheld the glory and the greatness of the men of medicine in the Golden State of the Pacific border.

DR. IRELAND, the author of "The Blot Upon the Brain," is preparing for publication, a new gallery of Eccentric or Insane Personages who have had much influence upon men, to include histories of Swedenborg, Louis II. of Bavaria, Louis Riel, Guiteau, Theodore of Abyssinia, Thebaw, late of Burmah, and Malagrida.

INDEX CATALOGUE OF THE LIBRARY OF SURGEON-GENERAL'S OFFICE, VOLUME IX., is received. We can add nothing to our former high commendation of the completeness and tasteful execution of this valuable reference book of a valuable collection, a library and index reference catalogue of which American physicians are justly proud.

Intestinal Obstruction. When Should Operative Measures be Resorted to in Intestinal Obstruction? Being a part of the Discussion on Intestinal Obstruction at the Meeting of the Medical Society of the State of New York, February, 1888. By Albert Vander Veer, A. M., M. D., Albany, N. Y., Professor of Surgery in the Albany Medical College, Fellow of the British Gynecological Society, Attending Physician Albany Hospital.

The History of Abdominal Section in Albany, with a Report of Seventy-five Cases. By Albert Vander Veer, M. D., Professor of Surgery in the Albany Medical College, Fellow of the British Gynecological Society, Attending Surgeon Albany Hospital. Read at the Meeting of the Medical Society of the State of New York, February, 1888.

Paranoia: Systematized Delusions and Mental Degenerations. An historical and critical review by J. Séglas, Assistant-Physician of the Hospital of Bicetre, Paris, Translated by William Noyes, M. D., Assistant Physician of the Bloomingdale Asylum, New York.

The Physician's Bedside Record, published by the Plimpton Mfg. Co., Hartford, Conn., is worthy of commendation as a suggestive and economical labor-saving device for clinical memoranda.

Some of the Advantages of the Union of Medical School and University. An address delivered at Yale University, June 26th, 1888, by William H. Welch, M. D., Professor of Pathology in Johns Hopkins University.

Our Present Knowledge Regarding Muscular Atrophies and Hypertrophies. By Landon Carter Gray, M. D., Professor of Nervous and Mental Disease in the New York Polyclinic.

The Weaver Case. By Hampton L. Carson, Esq. Read before the Medical Jurisprudence Society, May, 1887.

The Case of John Daley. By John B. Chapin, M. D. Reported to the Medical Jurisprudence Society, April, 1888.

A Study of Arterial Tension in Neurasthenia. By S. G. Webber, M. D.

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